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Original Articles.

THE PHYSICAL ASPECT OF AMERICAN FOOTBALL.

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THE following is a report of the experience of the writers in the care of the football squad of Harvard University during the season extending from Sept. 12 to Nov. 25, 1905.

The report is presented, first, in order to show the number, character and severity of the injuries which were received, while playing football, by the members of the football squad of one university. The first table of figures includes all injuries received by the players previous to this season, while playing football either at school or in college; the second table includes all injuries received this year. Second, to illustrate general methods which were found to be useful in the treatment of acute traumatism common among football players; and, finally, to present certain special methods of treatment of special injuries.

The report is based upon (1) the written statements of the players themselves regarding the injuries they had received while playing football previous to this year. Every man was required, on joining the squad, to make out a card for a card catalogue, on which he stated the number and the character of his previous injuries. (2) Clinical records which were kept by the writers of the cases which came under their observation and treatment. These records were kept only in case of injuries of great or moderate severity, practically all of which were sufficient to keep men out of the play for a greater or less length of time. No clinical record was kept, however, of the infinity of minor injuries which constantly came under observation, such as abrasions, scratches, minor contusions. (3) The answers received to a circular letter which was sent, after the close of the season, to every one who had been at any time a member of the squad. This circular letter asked the number and character of previous injuries, the length of time they were kept out of the play by those injuries and the length of time they were kept away from college duties, and whether recovery from those injuries was now complete. Similar questions also were asked in regard to injuries received during the season of 1905. A hundred and fifty such circular letters were sent out and answers were received from one hundred and ten men.

Besides the members of the university squad, players from the freshmen and class squads also were treated, but no clinical record was kept of those cases, nor are they included in the statistics presented in this paper, although a considerable number of serious injuries was treated among members of those squads.

There were 150 men altogether in the football squad, of whom 50, at least, played but a very

short time, varying from a few days to a week or two. Of the remaining 100, only 70 can be said to represent the real playing strength of the football squad. This fact makes the proportion of injuries received this year almost double as great as would appear at first sight.

It has been claimed that the number of injuries received this year was unusually great and more numerous than in any preceding season. In the absence of any available records of other seasons this point cannot be determined accurately, but in our opinion it is probable that this season is not markedly worse than preceding ones. We are confirmed in this opinion by interviews with other men who previously have had medical charge of the football squad. One or the other of us was constantly present at the field, from half past three or earlier until dark. The men were very carefully observed and many injuries were recognized which would have escaped less close observation. In comparing the figures in this paper with those of other institutions where no constant surgical attendance is maintained, the numbers may appear relatively large because, in the absence of such observation, many injuries would escape notice.

The players of the university squad were required by the head coach to report every injury, no matter how trivial it seemed to them, to the surgeon in charge. In expectation of numerous minor injuries and with a knowledge of the occurrence, in some previous years, of occasional epidemics of minor infections, special precautions were taken regarding asepsis this year. In the first place, an efficient sterilizing outfit was installed. A sufficient supply of clean towels was provided in order to prevent the possibility of transmission of skin infections, and pains were taken to see that the underclothing of the players was changed frequently. As a result of these precautions there was no case of an infected wound during the season nor did any case of skin infection occur. This result, we believe, has not been paralleled in former years.

Believing that a first-class man slightly injured was inferior to a second-rate man in first-class physical condition, great pains were exercised to prevent injured men from returning to the play too soon. This apparently excessive caution of the surgeons met in some cases with better opposition from the players. In fact, one man, at least, stated that if it were not for the presence of a surgeon, he would be playing. The wisdom of caution, however, was shown by the fact that in but two cases were men allowed to play as soon as to have an immediate recurrence of their previous disability. On the other hand, it must be stated that the position of the surgeon is rather a trying one. Football players are quite unlike ordinary private patients. Their disregard for pain is marked and their great desire to be sufficiently recovered from an injury to be able to play, in spite of what was considered by the players to be excessive caution on the part of the "chances" were taken. For instance, a treatment, under ordinary circumstances, with a dis-

located semilunar cartilage, would be perfectly contented to lead a more or less quiet life for a considerable length of time. The football player, however, as soon as the acute symptoms have disappeared, is quite unwilling to be prevented from playing. In no case was any sedative drug used in order to deaden the pain of an injury so as to allow a player to take part in a game before recovery was complete.

The injuries were received in various ways: some in open play, some in the mechanical drill of "tackling the dummy," but a very great proportion occurred in the "bunch" or "pile" which forms after a player running the ball is tackled. The surgeons very quickly got in the way of watching every pile with great interest and apprehension. The exact proportion between the injuries received in the open and in the pile, however, are not controlled by accurate figures. The number of injuries received in the games and in practice were proportionately about the same.

LIST OF INJURIES RECEIVED WHILE PLAYING FOOTBALL PRIOR TO 1905.

| | |
|--|-----|
| Sprain of thumb | 9 |
| Bruise of knee | 1 |
| Cuts, various places, usually head | 5 |
| Bruised shoulder ¹ | 31 |
| Dislocation of elbow | 1 |
| Injury to back | 2 |
| Synovitis of knee | 39 |
| Sprain of ankle | 12 |
| Concussion ² | 7 |
| Fractured wrist | 2 |
| Dislocation of knee | 1 |
| Fractured rib ³ | 4 |
| Dislocation of shoulder | 3 |
| Contusion of chest | 1 |
| Fractured clavicle | 7 |
| Ruptured muscle | 7 |
| Fractured arm | 4 |
| Injury to eye | 1 |
| Sprain of wrist | 3 |
| Ruptured internal lateral ligament of knee | 1 |
| Dislocation of thumb | 1 |
| Fractured toe | 1 |
| Broken nose | 16 |
| Fractured olecranon | 1 |
| Dislocation of ankle | 1 |
| Broken foot | 1 |
| Sprained toe | 1 |
| Fractured ankle | 2 |
| Fractured carpus | 3 |
| Fractured elbow | 2 |
| Dislocation of outer end clavicle | 5 |
| Fractured finger | 8 |
| Injury to kidney ⁴ | 1 |
| Fractured fibula | 1 |
| Teeth out | 1 |
| Total | 216 |

LIST OF INJURIES RECEIVED DURING 1905.

| | |
|---------------------------|----|
| Sprained thumb | 1 |
| Fractured fibula | 1 |
| Cuts (requiring stitches) | 12 |
| Bruises ⁵ | 6 |

¹ Judging from our own experience, a very considerable number of the so-called bruised shoulders must have been partial dislocations of the outer end of the collar bone.

² Judging from this year's experience and from conversations with the players, we believe that the figure under concussion is much too small.

³ The same statement applies to fractured ribs.

⁴ The nature of the injury to the kidney was not specified.

⁵ These bruises were sufficient to keep the player out of the game.

| | |
|---|-----|
| Dislocation of elbow | 1 |
| Teno-synovitis tendo-Achilles | 1 |
| Dislocation of xiphoid cartilage | 1 |
| Injury to back ⁶ | 9 |
| Synovitis of knee ⁷ | 3 |
| Sprained ankle | 13 |
| Strained muscle of side | 2 |
| Crushed finger | 1 |
| Contusion of knee | 1 |
| Contusion of side | 1 |
| Fractured rib | 5 |
| Rupture of internal lateral ligament knee | 1 |
| Dislocation of shoulder ⁸ | 2 |
| Concussion | 19 |
| Ruptured muscle | 6 |
| Dislocated semilunar cartilage | 10 |
| Contusion of elbow | 1 |
| Compound dislocation of fingers | 2 |
| Traumatic valgus | 1 |
| Fracture of zygoma | 2 |
| Torn ear (sutured) | 3 |
| Broken nose | 7 |
| Fracture of rim of pelvis | 4 |
| Fractured clavicle | 1 |
| Bruised hip | 2 |
| Fracture of semilunar of wrist | 1 |
| Dislocation of acromial end clavicle | 11 |
| Fractured finger | 4 |
| Broken second cervical vertebra | 1 |
| Dislocation of inner end of clavicle | 1 |
| Rupture of biceps of leg | 1 |
| Middle meningeal hemorrhage | 1 |
| Hematoma of ear | 2 |
| Fracture of metacarpal bones | 3 |
| Sprained elbow | 1 |
| Total | 145 |

It must be accepted that the figures of the injuries received during the previous years are within the facts. The players were most of them extremely conscientious about answering the questions in the circular letter. On the other hand, the game appears to breed such a contempt for physical pain that many injuries which would appear severe to the ordinary individual were considered trivial by the players. For instance, one man, in answering the circular letter, answered the question, "How many injuries were received during 1905?" "Absolutely none whatever," although at that time he was being treated by one of us for a very large hematoma of the ear and had previously received a partial dislocation of the outer end of the collar bone, and an (unrecognized) fracture of a metacarpal bone. Our own record of the serious injuries of this year (1905), however, is complete.

The following general methods of treatment of the ordinary, acute injuries were adopted. There was almost no fixation of injured parts, except fractures and dislocations, throughout the entire season, as the men were anxious to return to play and it was our belief that fixation usually unduly prolongs the time of convalescence. In the ordinary sprains of joints and notably in the cases of acute knees, heat was used very extensively, either by means of hot bathing or by means of the "baking machine." A large part

⁶ The character of the injuries was variable, but includes what is ordinarily spoken of as "strained back," which oftentimes leads to very marked disability for a considerable length of time.

⁷ These were cases in which no cause for the synovitis was made out and does not include the synovitis following, for instance, a dislocated semilunar cartilage. The number of these cases was agreed by everybody to be much less than in previous years.

⁸ In one case there had been a previous dislocation of the shoulder

of the acute injuries were treated by massage, with most remarkable and satisfactory results. We had, almost throughout the season, the attendance of a most efficient masseur, whose work was highly satisfactory. When a sprained or injured joint was unusually tender, partial fixation was accomplished by means of compression bandages, but in no case of joint injury was there fixation by splints, and in only two cases of ruptured muscle was complete fixation carried out. For partial fixation we used a heavy layer of sheet wadding surrounded by the so-called "Ideal" bandage, which was found extremely satisfactory, comfortable and efficient.

Certain classes of injuries were common and these are mentioned under special headings.

Head injuries.—Cases of concussion were frequent, both during practice and games. In fact, but two games were played during the entire season in which a case of concussion of the brain did not occur. There were several noticeable features in these cases. Frequently, the fact that a man had received a serious head injury was noticed by the surgeon from the side lines before it was recognized by the players. This was due to the fact that a player might, apparently, automatically run through a considerable series of plays before his mates noticed that he was mentally irresponsible. The mental state of the players who had concussion was variable, some being highly excitable and hysterical, others merely confused, and in a few cases, knocked completely unconscious. In every case there was a certain loss of memory, both previous and subsequent to the injury. The loss of memory previous to the injury varied from a few minutes to a week. In all cases also there was a loss of memory as to facts occurring for a variable time subsequent to the injury. For instance, it was common to hear a player ask if he had played the first or second half of the game. In all cases the loss of memory was greater at first than it was after a few hours. For example, the man who had lost his memory of events which occurred for a week before the injury, ultimately got to a point where he remembered everything up to within an hour or so. Players who had had concussion were at once carefully examined to exclude the possibility of middle meningeal hemorrhage and, during the earlier part of the season, were sent to their rooms or to their homes, with a companion, with strict orders that they were to be left alone at no time until noon of the following day. Later on in the season this method not seeming sufficient, the injured men were in every case compelled to go to the infirmary, where they remained over night. These precautions were taken to avoid the possibility of the occurrence of middle meningeal hemorrhage with delayed symptoms. One case of middle meningeal hemorrhage did occur.

Concussion was treated by the players in general as a trivial injury and rather regarded as a joke. The real seriousness of the injury is not certain. Our own experience with the after-effects of the cases is not sufficient for us to draw

any definite conclusions, but from conversation with various neurologists, we have obtained very various opinions in regard to the possibility of serious after effects.

Dislocation of the outer end of the collar bone.—Partial and complete dislocations of the outer end of the collar bone were extremely numerous and were received in a variety of ways, some while tackling in the open, but the greater num-

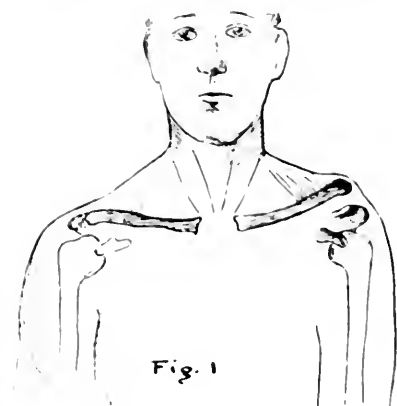


Fig. 1

Complete dislocation upward of the acromial end

ber of them were caused by the players having one shoulder caught in the pile with a mass of men falling upon the unprotected shoulder. In but two cases was the dislocation a complete one, and in one of those cases the player received it very early in the game and finished a twenty-minute half with the collar bone and the scapula entirely separated. He was extremely fortunate

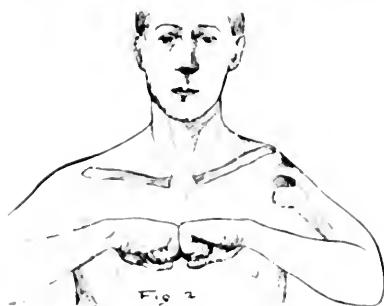


Fig. 2

Same case as Fig. 1

to obtain no more serious results. One player on the second eleven played throughout the entire season with a complete dislocation received during a former season.

In all there were eleven cases, the majority of which were incomplete. Fig. 1 shows a case of complete upward dislocation. The acromial end of the clavicle is projected upward. Two factors

act to produce the deformity. The contraction of the trapezius muscle tends to draw the clavicle upward. The weight of the arm, deprived of the out-rigger support of the clavicle, pulls the shoulder (scapula and humerus) downward, inward and forward.



Dressing for dislocation of acromial end of clavicle, front view.

Fig. 2 shows the same case with the arm held out from the trunk which makes the deformity more prominent. In this case it was possible to place two fingers side by side in the gap between the clavicle and the acromion.

Treatment.—The reduction of this dislocation is simple. The shoulder is lifted upward and the clavicle is pressed down into place. On the other hand, the maintenance of reduction by the means ordinarily employed is extremely difficult.

Various dressings were tried, all of which proved more or less ineffective in holding the bones in the corrected position. The dressing shown in Figs. 3 and 4 is a modification of a dressing devised by Stimson in 1883 with the addition of a strap (A) to correct forward displacement of the shoulder.

The forearm is supported by a wrist sling (C). With the shoulder held in the corrected position, strap (A) of two-inch surgeon's plaster is started near the wrist, carried over the point of the elbow, which is protected by a pad, and back across the upper arm, and while the shoulder is held back in the corrected position, the plaster is carried upward to the base of the neck behind, or forward over the shoulder to the front of the chest. Strap (B) is then applied, starting on the front of the chest, going upward over the shoulder about an inch internal to the outer end of the clavicle, down the back of the arm, around the elbow and up in

front, crossing the first turn of the strap at about the middle of the clavicle, thence over the shoulder and to the opposite side of the back. The tendency to inward displacement of the shoulder is corrected by an axillary pad not shown in the picture. Outside the dressing a Velpeau bandage is applied. This dressing has been comfortable and effective in every case.

Figs. 5 and 6 show the result in a case of complete upward dislocation of the acromial end at the end of seven weeks. This case was complicated by subcoracoid dislocation of the head of the humerus on the same side. The deformity is very slight and the prominence is due largely to atrophy of the shoulder muscles from fixation. At present function is unimpaired. All joint motions are free and unrestricted with the exception of some difficulty in putting the hand behind the back, which is gradually disappearing.

Fig. 7 shows the dressing employed in cases of incomplete dislocation after the men had resumed playing at the end of two or three weeks. It was intended only as a support, the shoulder being protected by special pads. It proved effective, not a single case recurring.

Dislocated semilunar cartilage.—The number of these injuries also was large and they were received almost always in the pile and were due to a blow upon the outer side of the knee while the lower leg was fixed. Two men played through the season with dislocated semilunar cartilages which were known to have been received in other



Same, back view.

years, and in both cases their efficiency was very much impaired. Three men were entirely kept out of the play after receiving such injuries.

A method of reduction was employed which we believe to be new, and was found very effective. The patient lies flat on the back and flexes the

thigh firmly against the chest. In this position two advantages are at once apparent; the thigh is absolutely fixed, and the knee can be completely flexed.

If the leg is now rotated outward and abducted,



Result of case of complete upward dislocation at the end of seven weeks

the inner articular surfaces of the joint are separated. The leg is now rotated inward, and at same time extended, the fingers of one hand pushing the cartilage into place. Reduction is usually accomplished before the foot has completed the arc shown in the figure.

This method of reduction was successful in all of the cases in which it was tried.

Dressing for semilunar cartilage. After reduction a pad is applied just internal to the patella over the point at which the cartilage escaped from the joint. It is important to note that this point is not over the lateral aspect of the joint, but is farther forward, i. e., antero-internal. The pad is held in position by cross strapping of narrow surgeon's plaster. It was found that a single series of narrow plaster strips applied as shown in Fig. 11 was often as effective in holding the car-



Same case with arm partly extended

tilage in position and had the additional advantage of allowing more free flexion of the knee, as the strapping shown in Fig. 12, so that the men could run and resume play almost at once. This dressing was used in ten cases of displaced car-

tilage and in no case did the cartilage slip out, even during play.

The advantages of the above described methods we believe to be, the absolute simplicity of the dressings, the ease with which they can be applied and the small cost of the materials. They have been tested in a sufficient number of cases under conditions not altogether ideal, and have proved effective in every case. The simple strapping of the knee for displaced cartilage succeeded in cases where elaborate and expensive apparatus failed.

Fractures. — The number of fractures received was considerable, although nearly all were of minor severity. In almost every case the fractures were X-rayed. In many cases the men were allowed to play after receiving fractures, at a time when patients ordinarily would be willing to protect themselves, although in every case the players were very carefully guarded by special apparatus. In no case did a man who had been allowed



Simple elastic dressing

to play a relatively short time after the receipt of a fracture receive a refracture.

Ruptured muscles. These injuries were common and affected either the quadriceps extensor of the leg or the hamstring muscles. Ruptures of the quadriceps were especially common among the heavy men and in many cases were due apparently entirely to the muscular exertion of quick starting. In some cases and especially in the severer ones the injury appeared to be due to a violent blow upon the thigh of a man running at speed, with the muscles tense. Ruptures of the hamstring muscles, which also are common among sprinters, were in every case due to muscular exertion alone. These cases were treated by heat and massage and moderate exercises, such as walking. In two cases, however, the injury was so severe as to require fixation by splints.

Sprained ankles. — The injuries of this type were not, upon the whole, severe, and in no case was a player kept out of the scrimmage for any considerable length of time. The ankles were treated by heat, massage and by strapping, although in one case a special apparatus, somewhat resembling a valgus shoe, was worn by a player throughout the greater portion of the season.

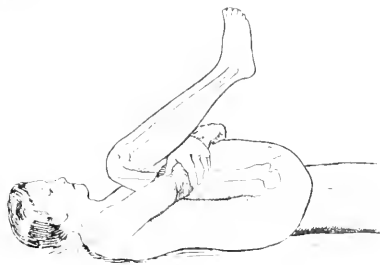


Fig. 8

Reduction of semilunar cartilage, first step; flexion of the thigh.

Synovitis of the knee. — These cases, except those due to a loose semilunar cartilage, were not numerous, and were treated by heat, both hot water and baking, by massage and by compression. The results obtained from these measures were surprisingly good and the time out of play was extremely limited.

Broken noses. — In practically every case there was a fracture, not only of the external but of the internal nose, and all those cases were sent to a nose specialist.

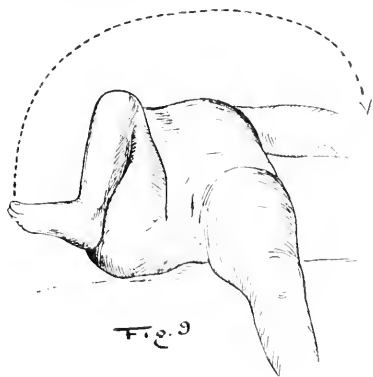


Fig. 9

Reduction of semilunar cartilage, second, third and final steps, outward rotation of leg, abduction of leg, inward rotation of leg and extension.

The opinion of the players was that the injuries received were, on the whole, not severe. The real severity of the injuries, however, may be estimated in a number of ways:

(1) By the length of time during which players were incapacitated from taking part in the game. In answer to the circular letter the players stated the number of days that they had been kept out of the play by their injuries. The aggregate number of days during which players were incapacitated previous to this season was 864. The aggregate number of days during which players were kept out of the play during the season of 1905 was 1,057 days, that is an aggregate practically of three years. In regard to the apparent excessive amount of incapacity during the season of 1905, it must be borne in mind that players who had received injuries were not allowed to play until they had received the permission of the surgeon in charge, and, as has already been stated, great caution was exercised in keeping men out until they were thoroughly fit to play.



Cross strapping

(2) Another index of the severity of the injuries is the number of days that players were kept away from scholastic or college duties. From the answers to the circular letter it appears that previous to 1905 players were kept away from school or college a total of 128 days; during the season of 1905 they were kept away from college duties a total of 175 days. These figures are based upon the players' own written statements, but have not been verified by the college record and probably do not represent more than the facts.

(3) Another index of the severity of the injuries is shown by the amount of surgical supplies which were required during the season to properly dress and take care of the injuries. The cost of those supplies for the past season was (including the sterilizer which cost about thirty dollars) two hundred and twenty dollars.

A final index is the answer of the players as

to whether their recovery from injuries was complete, at the time the circular letter was sent out, a few days after the close of the season. One hundred and ten answers were received to 150 letters, and of those 110, 35 acknowledged that they had not entirely recovered from their injuries at that time. Besides those 35 who acknowledged that they still were suffering from a certain amount of disability or discomfort, it is known to us that many of the men who said that they were entirely recovered are suffering from injuries of more or less permanence. For instance, one man said that he had entirely recovered "except for a slight loss of vision." Another said that he had completely recovered "except for a slight dullness in the side of his head, with a bloodshot eye." Another reported that a loose semilunar cartilage was "absorbing," but "still in evidence." No one seems to be in a position to settle with certainty the question as to whether there is any possibility of later effects from concussion. Many of the joint injuries are of such a character as to be likely to be progressively worse and many of the injuries to the shoulder are certain to cause some disability in later years.

The question arises, Is it possible to avoid these injuries as the game is now played? Many of the players claim that many of the injuries are avoidable. This year special precautions were taken to avoid the occurrence of injuries. Men who were known to be candidates for the squad

before the violent work began, and special pads and armor were provided in sufficient quantities to protect the players as far as possible. In spite of these special precautions it is claimed that the number of injuries was excessive. It was noticeable that the injuries came in certain groups. In the early days of the practice the number of



Single strapping, leg flexed.



Single strapping

were notified early in the summer to begin to get into good physical condition before reporting for football in the middle of September. The scrimmaging was not begun as early this year as is usual, in order to harden the men up as much as possible

strained and ruptured muscles was very large, especially among the heavy men, so that almost no one of the heavy men escaped. Then came a period of sprains and bruises during the early days of the scrimmaging. Then came a long list of mixed casualties, and it is true that the number of injuries at the end was relatively small, although some were of a severe character, showing, apparently, a survival of the fittest. It does appear that expert players do protect themselves from injury in a measure, but one of us, two weeks before the Yale game, made out a list of twenty-two men from whom it was certain that the eleven which was to play against Yale would be chosen. Only one man played in the Yale game who was not on that list and he had previously twice been injured. Among those 22 men, at the time the list was made out there had occurred 24 injuries, such as are included in the table, although there were two men who at that time had been uninjured this year. A fracture of the ribs, a fractured nose and a dislocated semilunar cartilage, as well as other injuries, occurred among those 22, after that list was made out. Of the 150 men who were on the squad, only 30 claimed to have received no injuries prior to 1905. It seems to us that no skill is sufficient to protect a man who plays the game long enough. The mental attitude of the players is interest-

ing. The game inculcates marked indifference to physical pain, which is a desirable thing. It also appears to educate the men to a marked degree of indifference to the welfare of the body, in comparison to a mere game, which seems to us not so satisfactory. In many cases it was impossible to make the players see the severity of the injuries they had received, and in many cases where men were forbidden to play unless their parents assumed the responsibility, their parents appeared equally indifferent. The difference in the point of view between schoolboy players and players on the university eleven is very great. As has been noticed by us in surgical attendance upon schoolboy elevens, the schoolboy responds to injury much as the ordinary patient does, while, it seems to us, that the men who survive to play upon the university eleven are to a very large measure those men whose nervous system does not readily respond to pain.

An accurate comparison as to the relative proportion of injuries received by men playing football and those taking part in other major sports would be interesting, but we have not the facts to make an accurate comparison. One of us, however, has had a very intimate knowledge of college baseball for the past seven years and there is no question but that, while a man may be seriously injured in playing baseball, the relative number of injuries is incomparably less in baseball than it is in football. We believe the same to be found true in rowing and in track games.

Conclusions.—In consideration of the above facts we believe that the following conclusions may be drawn:

(1) The number, severity and permanence of the injuries which are received in playing football are very much greater than generally is credited or believed.

(2) The greater number of the injuries come in the "pile" and not in the open plays, although serious injuries are received in the open.

(3) The number of injuries is inherent in the game itself, and is not due especially to close competition, as is shown by the fact that the proportion of injuries received in games and in practice is about the same.

(4) A large percentage of the injuries is unavoidable.

(5) The percentage of injuries is incomparably greater in football than in any other of the major sports.

(6) The game does not develop the best type of men physically, because too great prominence is given to weight without corresponding nervous energy.

(7) Constant medical supervision of the game where large numbers of men are engaged is a necessity and not a luxury, although it is a question if a game, requiring the constant attendance of two trained surgeons, is played under desirable conditions.

(8) The percentage of injury is much too great for any mere sport.

(9) Leaving out all other objections to the game, ethical and practical, the conditions under

which the game is played should be so modified as to diminish to a very great degree the number of injuries.

FRACTURES OF THE SUPERIOR MAXILLARY BONE CAUSED BY DIRECT BLOWS OVER THE MALAR BONE. A METHOD FOR THE TREATMENT OF SUCH FRACTURES.*

BY HOWARD A. LOTHROP, A.M., M.D.,

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THE variety of fracture under consideration is generally classed as a fracture of the malar bone involving either its body or the zygomatic arch. These fractures are the result of direct violence and, as will be pointed out later, the lines of fracture are chiefly in the superior maxilla.

Anatomy.—Because of its situation the malar bone is frequently exposed to direct violence, such as blows or falls. This bone and the structure which supports it are formed so as to withstand considerable violence without fracture. The body of the malar is moderately thick and it is supported by four processes radiating in different directions. Running posteriorly is a process which unites with one from the temporal bone so as to form the zygomatic arch. This arch forms a strong support for the malar and gives origin to a part of the masseter muscle and it is in close proximity to the temporal muscle. The arch alone may be fractured by direct blows from comparatively sharp objects but such lesion is uncommon. As a rule there is a single line of fracture of the arch accompanied by a depression of the body of the malar itself and the essential fracture is that of the superior maxillary bone.

The superior maxilla is an irregular-shaped bone presenting strong borders and processes and thin surfaces. Upon the strong malar process of the maxilla rests the malar bone and further support is given the malar by its radiating frontal, maxillary, zygomatic and orbital processes. The surfaces of the maxilla which concern us are comparatively thin and are named according to the direction in which they face, namely, orbital, zygomatic and facial. Bounded by these thin surfaces is the cavity of the maxilla known as the antrum of Highmore. It is lined with mucous membrane and its only outlet of communication is with the nasal cavity. The apex of the antrum is at the malar process of the maxilla. The infra-orbital nerve appears just below the maxillary process of the malar and is frequently injured in these fractures as are the anterior dental nerves which follow grooves in the facial wall of the maxilla.

Symptoms. (a) *Fractures of the zygomatic arch alone.*—These are rare and are the result of direct violence caused by comparatively sharp objects. The arch must fracture in two places; the body of the malar remains intact. In addition to the history of the possible bruising of soft parts, the examiner may detect a local depression although the deformity is not very marked.

* Presented at a meeting of the Clinical Society of the Boston City Hospital, December, 1903.

The finger in the mouth may detect a difference in the zygomatic arches of the two sides. Mastication is usually painful. The discomfort as a whole is very moderate.

(b) *Fractures of the superior maxilla and zygomatic arch with depression of the malar.*—This injury is not uncommon. It is the result of direct blows over the malar or the result of falling on some hard substance. The violence is transmitted directly through the malar and the displacement of this bone depends somewhat upon the direction of this violence. The line of fracture is subject to little variation. It involves the facial surface of the maxilla starting just below the extremity of the maxillary process of the malar, passing through or near the infra-orbital foramen; thence, obliquely downward and outward below the malar process of the maxilla on to its zygomatic surface. There is necessarily a line of fracture in the very thin orbital surface. The tendency is to crush the malar into the maxilla so that the former is depressed and impacted, remaining in this position unless interfered with. In most instances the zygomatic process fractures in one place. Crepitus is unusual. The deformity is characteristic. The asymmetry of the face should be observed from in front, behind and above. Generally the skin remains intact but occasionally it is wounded. Soon, however, there is local swelling of soft parts, often sufficient to cause the bony deformity to be overlooked. Thus, frequently cases are not diagnosed until a subsequent time. An early common symptom is nasal hemorrhage from the injured side because of a wound in the mucous membrane of the antrum. The hemorrhage is transitory and very moderate. Furthermore, hemorrhage takes place into the surrounding tissues, such as eyelids and cheek, causing discoloration. There is very frequently subconjunctival hemorrhage, often involving the entire sclera. There is tenderness over the malar and vicinity. Mastication is painful because of the pulling of the masseter and pressure on the temporal muscle. There is frequently anesthesia in the distribution of the infra-orbital and anterior dental nerves, this passes off in time. By an early examination it may be possible to palpate the ridges on the facial surface of the maxilla made by the fragments. Comparison between the zygomatic arches examined within the mouth shows a narrower space on the injured side. Bimanual examination with one finger under the malar may occasionally reveal crepitus. Fracture of the nasal bones is sometimes a complication.

Course.—The discomfort suffered in these cases is usually no greater than that resulting from a simple contusion; this is due largely to the fact that the fracture is generally an impacted one. In due time the swelling subsides leaving a varying degree of asymmetry as the only end result when left untreated. Finally all sensation is restored. Occasional complications are abscess of the cheek and of the orbital fossa. Empyema of the antrum of Highmore is a most unusual complication.

Treatment.—As already mentioned, if fracture is unsuspected and these cases are treated as contusions, recovery will be complete in every respect except that there will remain a varying degree of permanent deformity. The usual local and general palliative measures should be resorted to for the relief of the subjective symptoms. Care in the diagnosis of all injuries in the vicinity of the malar bone should enable the examiner to determine whether a fracture is present or not and if a fracture is made out, operative interference should be resorted to for the purpose of restoring the malar to its normal position.

Operative treatment.—The aim of operative treatment is to restore fragments, and this object may be accomplished by different methods:

(1) An incision has been made over the malar for the purpose of inserting an instrument into this bone by means of which it may be drawn out into place. The objections to the procedure are sufficient for its discontinuance. These are the persistence of a scar, and inability to maintain the restored position of the malar until bony repair is complete.

(2) Blunt instruments have been introduced by the mouth under the zygomatic arch, and by this means the malar has been elevated to its proper place. This method is less objectionable than the first because it obviates any subsequent facial scar. The disadvantages consist in the fact that only the malar and zygomatic arch are raised without there being any very satisfactory means of retaining these parts in place. The depressed portion of the maxilla is not elevated while, on the other hand, these maxillary fragments could be used (as in the following method) for the subsequent support of the malar. This method is sometimes followed by troublesome abscess of the cheek in consequence of infection of the wounded soft parts in the vicinity of the zygoma.

(3) This method has been used by the writer for several years. It consists in elevating the malar together with the various fragments of the maxilla, working through a small opening in the canine fossa whereby all elevating force is directed from the surface of the antrum outward. The writer believes this method offers the following advantages: The degree of trauma of soft parts produced is comparatively slight; all depressed fragments can be elevated; their position can be maintained; there is no risk of subsequent empyema of the antrum; such procedure does not disable the patient more than a few days so that he may resume his work; there is no facial scar; the facial asymmetry, if such persists, may be reduced thereby to a minimum; and finally, neglected cases may be treated successfully even after the lapse of several weeks.

The technique of operation is as follows: The patient should be under the influence of a general anesthetic, the administration of which should be continued during the operation with a method by which vapor is conducted to the air passages through a slender tube in order not to interfere with the operator while he is working about the

mouth. The best position for the patient is sitting erect in a chair which supports the back leaving the head free to be moved by an assistant in different directions. The face should be washed carefully with soap and water, rinsed off with a sterile solution and then should be washed with a 70% solution of alcohol. The nostrils may be cleaned in a similar manner, but there is no intra-nasal preparation. Prior to the administration of the ether, the teeth should be cleaned and the patient should gargle with some mild solution. The hair should be covered with a sterile rubber cap or towel and a sterile sheet should cover the rest of the patient, leaving only the face exposed.

Operation.—The cheek on the affected side should be raised and pulled to one side so as to expose the canine fossa. This may be done by means of the finger of the operator or by a retractor. A horizontal incision about three quarters of an inch long should be made along the line of junction of the mucous membrane of the alveolus and the cheek in the uppermost portion of the canine fossa. The whole incision is posterior to the canine ridge and is at the highest point of the vestibule of the mouth. The incision should be carried down directly to the bone and the soft parts slightly freed by means of a periosteum elevator. At this juncture one may feel the line of fracture in the anterior wall of the maxilla. The director should now be pushed through the fissure or, if none be detected, through the intact bone into the antrum of Highmore. The director should be kept in this position and, guided by its groove, the operator may pass larger instruments into the antrum tending, meanwhile, to force the fragments upward and forward. The opening should be made sufficiently large to pass a No. 24 French sound. With elevators of suitable size and shape the depressed portion of the anterior wall of the maxilla may be elevated. Then a sound is introduced and its tip carried to the apex of the antrum, that is, directly opposite the malar bone. The tip of the sound seems to engage naturally at this point. The head should now be held erect and firm by assistants. Both hands of the operator should be placed on the sound, one being about half way down and resting on the side of the face in order to give support and steadiness. Gradual increase in pressure should now be exerted on the sound, the force being directed in such a manner as to tend to replace the malar in its normal position. As the malar resumes its normal position the asymmetry will be seen to disappear. With one hand holding the sound and the other placed over the malar, free mobility will now be observed for the first time. By means of the sound and the other elevators all fragments may be replaced. There will be a moderate degree of hemorrhage as a result of this manipulation, all of which ceases shortly. The finger placed on the skin over the malar and over the region of the anterior wall of the maxilla will serve for a guide as to the completeness of the reposition of fragments. Finally, introduce a rather

broad instrument through the opening into the antrum with its tip directed toward the malar so as to hold this bone in position. Then long and very narrow strips of iodoform gauze and sterile gauze should be introduced carefully so as to pack the antrum. These strips should fill up first the malar end of the antrum, gradually approaching its nasal surface. One must be careful not to push back the fragments of the maxilla and also not to force gauze in between the maxillary surface and the cheek. The ends of all of these narrow strips should be left just protruding at the incision in the vestibule of the mouth. When properly packed the position of all fragments may be maintained. No external dressing should be applied.

During recovery from the anesthetic the patient should be watched carefully so that he does not lie on the affected side of his face or press upon this region with his hand. He should be left to himself only when he has thoroughly recovered from the anesthetic so that he may not unconsciously interfere with the replaced bones. It is preferable that he remain in bed one or two days and after that he should be allowed to sit about in a warm room. He should be given ordinary simple diet. About every four hours it is wise to use a simple cleansing gargle and mouth wash. No intra-nasal treatment will be called for. There will be moderate edema of the cheek on the affected side and perhaps of the lower eyelid. Occasionally there is an increase of the subconjunctival ecchymosis. Local discomfort, if any be present, may be alleviated by light wet compresses. On the fourth or fifth day all the gauze may be removed from the antrum. This procedure generally causes but little discomfort and if there be any hemorrhage at this time it usually subsides in a moment. In cases treated by the writer subsequent packing has not been necessary, either to control any hemorrhage or to maintain further the position of the fragments. On the two following days the antrum may be irrigated through the buccal wound with a warm saline solution holding the head forward so that the fluid will escape through the mouth and nostril. At the end of about a week the incised wound will be healed and no further local treatment called for. During the first week there may be a certain amount of serous discharge from the nose on the affected side, but this subsides at once without further trouble. At the end of about ten days all local swelling will be gone. The tendency to relapse in these cases is very slight and when the end result is complete the degree of asymmetry is imperceptible or noticeable only when the patient is observed carefully. The wound in the mouth heals very rapidly and it is a fact that fractures of the superior maxilla, the result either of the original trauma or of operation only exceptionally are followed by empyema of the antrum.

The following cases are examples of the lesion under consideration treated by the method just described. They were patients operated by me at the Boston City Hospital on the services of

Dr. W. P. Bolles and Dr. H. W. Cushing to whom I am indebted for the privilege of reporting them:

CASE I. Male; thirty-six years old. About three weeks prior to entering the hospital this patient was attempting to hold a struggling horse when he was struck on the left cheek by the horse's head. This was followed by considerable swelling during the next two days. He sought no particular medical treatment until about two weeks after injury when he went to the out-patient department of the hospital on account of extensive swelling of the face. This swelling was due to an abscess which formed in the cheek. A small external incision was made to evacuate pus and the wound left open for drainage. No fracture of the maxilla was suspected at this time, but it was discovered as the swelling subsided. On account of fracture he was admitted to the hospital. When I saw him, about four weeks after his injury, the swelling had nearly disappeared but there was still a small persisting sinus in the cheek where the abscess was opened. About four weeks after injury he was operated on in the manner already described and the bone replaced without difficulty. The operation wound in the mouth was healed in a week. No nasal or antrum complication followed. It was about three weeks before the wound in the cheek healed. Since then patient has remained perfectly well and the degree of asymmetry of the malar bones is scarcely perceptible.

CASE II. Male, thirty-one years old. About one week ago patient was struck a single blow with a fist just below the left eye so as to include the nose and left malar bone. Patient states that there was considerable nosebleed at the time and that since then the upper teeth to the left of the median line feel numb and that there is numbness of the skin below the left eye. Eight days after this accident he entered the hospital for operation. Examination at this time showed much depression over the left malar so that a concavity rather than a convexity presented. There was still some subconjunctival ecchymosis. The left nasal bone was much depressed. No edema persisted. The finger in the mouth carried under the left zygoma detected a very narrow space compared with the opposite side. There was the sensory disturbance of which patient complained. He was operated eight days after accident in the manner described and discharged from the hospital in seven days. When seen some months later there was no disparity in the two malar bones.

CASE III. Male, thirty-six years old. Patient states that about two weeks ago he was struck on the left cheek by a small stone tied to a string which was thrown by a child. He was dazed for a moment. The skin was not injured, but the accident was followed by swelling and discoloration about the malar bone, together with bleeding from the left nostril. Ten days later there was subconjunctival hemorrhage. In the course of a few days the swelling had subsided and then he observed that the cheek bone was depressed. He noticed that the left side of the nose and face below the eye including the upper lip were numb. Since accident there has been considerable discharge from the left nostril. When seen by me there were to be observed the subconjunctival hemorrhage and the asymmetry. There was no edema, but there was anesthesia as noted. He was suffering no particular discomfort. Sixteen days after accident he was operated on in the manner described and the convalescence was without complication. The malar was fully restored.

CASE IV. Male, thirty years old. About nine days ago patient fell on a stove striking the left side of his face. This was followed by nosebleed which occurred in three days. When seen for the first time on the ninth day there was still considerable swelling of the tissues about the malar and left eye. There was a small abrasion here. There was subconjunctival hemorrhage and there was obvious bony asymmetry which was clearly due to a depression of the body of the malar. By the month it was possible to detect the line of fracture in the maxilla. Fourteen days after accident the malar was elevated by introducing a No. 24 French sound into the antrum by the method described. The end result was satisfactory.

CASE V. Male, twenty-nine years old. Patient states that he was struck on the right cheek by a man's fist and then by a broom handle. This accident was followed by nasal hemorrhage and anesthesia of the right cheek and right side of nose. This patient sought medical advice at once and was treated for contusions, fracture not being suspected apparently. After the swelling had subsided the bony asymmetry was observed and I saw him twenty-four days after his injury. All subjective and objective symptoms had disappeared except the bony disparity and this was sufficient for him to ask to have it corrected. Consequently he was operated on twenty-six days after his injury in the manner described above. It was perfectly easy to raise the fragments of bone even after this lapse of time and the case presented nothing unusual. The result was satisfactory.

CASE VI. Male; twenty-five years old. This patient was a fireman, and, while passing an electric pole in answering an alarm, the wagon slipped so that the pole struck the left side of his face. He was thrown to the ground and rendered unconscious and was brought to the hospital at once. Examination showed that he was suffering from concussion of the brain. There was a lacerated wound over the left eyebrow which connected with a small depressed fracture of the left supra-orbital ridge. This was too slight to call for interference and the wound was sutured. There was marked depression of the left malar bone. There were no signs of fracture of the vault or base of the skull. The usual signs of depression of the malar due to fracture of the superior maxilla were present. Three days after accident the left malar bone was elevated according to the method described above and the result was perfectly satisfactory.

CASE VII. Male, eighteen years old. This man was brought to the hospital with the history of a fall from a car. There were two scalp wounds over the left temporal region. There was very moderate swelling of soft parts over the left malar. There was nosebleed from the left side. On the following day there was left subconjunctival hemorrhage. The malar bone was much depressed and a ridge could be felt on the facial surface just below the lower margin of the orbit. The diagnosis was made of scalp wounds and fracture of superior maxilla with depression of malar bone. Patient consented to have the malar bone elevated. The antrum was opened in the usual manner, but when the sound was introduced into the antrum, notwithstanding that an unusual amount of force was used, the malar bone was not dislodged. It was thought was not to attempt greater force. From the fact that patient was operated two days after accident it was obvious that we had to deal rather with a very old fracture of which patient seemed to have no knowledge or with an asymmetrical development of the facial bones. The asymmetry was very noticeable. The wound in the nostril healed rapidly without any complication.

PUERPERAL SEPTICEMIA.*

BY E. H. STEVENS, M.D., CAMBRIDGE, MASS.

My excuse for bringing this subject before you this evening is, first, that while puerperal septicemia is practically a thing of the past in all well-managed lying-in hospitals, it is a disease which is still found in general practice not infrequently, causing many deaths and a vast amount of suffering the world over. In my opinion the number of women dying from septic poisoning after childbirth is much larger than one would be led to suppose from an examination of the death records. I find recorded in Cambridge, with a population of 95,000, only 20 deaths as having been caused by what can be classed as puerperal septicemia during the past ten years. I feel sure that this would be found to be far below the number if the exact truth were known.

My second reason for presenting a paper on the subject is that the treatment advised in this class of cases by many writers of the present day is so much at variance with what I have been in the habit of carrying out and advising during the past thirty years, that I have wondered if I have been wrong all this time. I wish to report two cases seen in consultation which represent two distinct types of puerperal sepsis.

Mrs. A., aged twenty-three, was confined April 2, 1903, with her second child. The delivery was normal in every way. There was no noticeable injury to the soft parts. Everything progressed well until the morning of the fifth day, when the patient complained of severe headache with general discomfort all over. The same afternoon the temperature was found to be 103; the pulse 120. For the first time the lochia was noticed to be foul smelling and scanty. During the night the patient was awakened from a sound sleep by a severe chill which was followed by sweating. The temperature taken just after the chill registered 105. Seen by the writer in consultation the next morning, when the following conditions were noted: A very foul odor pervaded the room, the patient's face wore an anxious expression, the skin was hot and dry, tongue slightly coated, the breath having a sweet, disagreeable odor, pulse 130, temperature 105.8. A second chill came on during the examination when the temperature rose to 106.2, the pulse going to 150. The chill was followed by profuse sweating. The napkin showed lochia to be pale, scant and very foul. An hour later, after free stimulation by brandy, the patient had sufficiently rallied for further examination. The uterus extended well above the pubis, and was slightly tender on pressure which brought on a slight contraction, expelling a quantity of bad smelling fluid. A Reynolds large-sized curette was introduced into the uterus and a large quantity of broken down blood clots with sloughing, granular matter was removed, after which the uterus was thoroughly irrigated with a weak formalin solution. It was recommended that the irrigation should be repeated three times during the next twenty-four hours. Forty-eight hours afterwards the temperature was normal and remained so. From this time on convalescence was uneventful.

The second case was seen in consultation with Dr. Stickney who has kindly furnished me with his notes of the case, up to the time when she came under my care at the Cambridge Hospital;

Mrs. P., twenty-one years, primipara. Labor thirty hours, low forceps, delivery 1.30 a.m., June 26, 1904. Small portions of placenta and part of membranes retained in uterus; these were immediately removed by the hand, and the uterus irrigated with a corrosive sublimate douche, while the hand was in the uterus; every part of the secundaries was removed, and the interior of the uterus felt perfectly smooth and clean. The first vaginal examination was preceded by a corrosive sublimate douche and all examinations made with rubber gloves. Although the labor was instrumental the perineum was not injured and the uterus contracted normally. June 26, 2 p.m., temperature 100. During the night of the 26th there was a chill, morning temperature 102, pulse 100, bad headache, lochia very slight. June 27, morning temperature 102½, afternoon temperature 103+, cheeks flushed, head ached badly, pulse 120, tongue coated, patient thirsty. Lochia sweet and very slight. June 28, restless night, pain general throughout abdomen, but worse in left lower portion, breasts not tender, milk fair quantity, nipples not cracked, temperature 104, pulse 120. Patient has a general septic look. Blood showed white count 54,000. Patient seen by Dr. Stevens. Careful examination of vagina and uterus, and no origin of sepsis found. June 29, woman's condition no better, morning temperature 104.6, pulse 120; afternoon temperature 104.7, pulse 125, breathing rapid. Was sent to the Cambridge Hospital in the evening.

On entering the hospital at 10 p.m. on June 29 she was found to be suffering from pain in the lower part of the abdomen, which was distended and tender. The uterus was freely movable and well contracted; nothing could be made out in the broad ligaments. Nothing abnormal in lungs; a soft systolic murmur was present, heard loudest over apex of the heart. (Dr. Stickney is sure this was not present in the morning.) Liver not enlarged, spleen not palpable, very anemic, breathing rapidly, temperature 103.6, pulse 130; lochia moderate, no odor; urine by catheter, specific gravity 1.026, large trace of albumin, no sugar; blood count 37,800 whites, Hb. 40%, iodine reaction positive.

At a consultation held soon after entrance, it was decided that the case was generally septic and did not demand surgical interference. Treatment 40 cc. anti-streptococcus serum by injection; brandy one-half ounce by mouth every two hours, bowels to be kept freely open by mag. sulph. June 30, had slept four hours, a mild delirium present. Brandy continued; 20 cc. serum given. From this time until July 14 the patient's condition changed but little. Eggs and milk with brandy were given freely and retained. All tenderness and distention of the abdomen disappeared three days after entering the hospital. Serum was administered on the first, second, third, fourth, sixth, seventh, ninth and eleventh days, in all, 80 cc. having been given. It was discontinued as the symptoms seemed not to be growing worse; in fact, many of the symptoms were better, such as disappearance of delirium, an increase in the amount of food ingested, lessening of the heart murmur. On the sixteenth day after entrance to the hospital the pulse and temperature went down, not to go up again. She left the hospital July 27 in very good condition. The heart murmur had entirely disappeared when examined on Oct. 4.

While the use of anti-streptococcus serum in this case proves little, the fortunate termination would encourage me to use it again in a similar case, even in larger doses.

Most of the more recent writers on this subject condemn the curette, advising strongly against

* Read before the Obstetrical Society of Boston, Jan. 24, 1905. This manuscript reached us too late for early publication.

its use, except occasionally. Williams, whose book on obstetrics was published in 1903, says:

"If the uterine cavity is perfectly smooth, a douche of several liters of boiled water or normal salt solution should be given, but curettage should not be thought of. On the other hand, if the interior is rough and jagged and contains more or less débris, it should be thoroughly cleaned out with the finger, after which an abundant saline douche should be employed. Curettage as a routine measure in all cases of puerperal endometritis is by no means to be recommended, for the reason that in most severe cases there usually is absolutely nothing in the uterine cavity which can be removed, and its employment can only do harm by breaking down the leucocytic wall which serves to prevent the invasion of the deep layers of the uterus by the offending bacteria. On the other hand, when the uterus contains much débris, its removal is more readily effected by means of the finger than by the curette.

"The routine use of bichloride or carbolic intra-uterine douches in the treatment of these cases is contra-indicated on several grounds. In cases due to virulent streptococci, an histological examination shows that the organisms have penetrated deep down into the tissues by the time the initial chill and rise of temperature occur. Under these circumstances the employment of an antiseptic douche is not rational, inasmuch as the germicidal fluid cannot possibly penetrate the uterine wall sufficiently deep to reach the bacteria, which are giving rise to the symptoms and upon which the further spread of the disease is dependent.

"What has been said concerning bichloride applies equally well to the other disinfectants. On the other hand their employment in cases of putrid endometritis is even less rational. In the vast majority of such cases simply cleaning out the uterus with the finger or curette, followed by a douche of sterile salt solution, will lead to a rapid fall of temperature and the amelioration of untoward symptoms. The object in giving a douche in these cases is simply to wash away the débris which has been left by the finger, and for this purpose sterile water or salt solution is far better than any antiseptic fluid.

"Unfortunately, up to the present time, the results of serum therapy have not proved more satisfactory than other methods of treatment."

Jewett, in the *Brooklyn Medical Journal*¹ of January, 1904, says about the curette:

"One of the principal causes of death in these cases is its indiscriminate use. The mortality with the curette is estimated at 22% to 50%, whereas in wholly neglected cases it would not be 20%. In three series of cases of streptococcus infection reported by Kronig, Savor and Williams, 38 in all, the mortality, under little or no intra-uterine interference was 5.75%.

"Its use is irrational; in milder forms of streptococcus endometritis the leucocytic wall bars diffusion of bacterial organisms; the curette breaks

down the barrier. In the severer forms no leucocytic zone is developed and streptococci are beyond the reach of the curette from the first. Here the curette opens lymphatics and veins anew and helps to reinforce the bacterial invasion. While the curette cannot be wholly condemned there can be no doubt that in the treatment of acute general puerperal endometritis the general results would be better if it were not used at all." In regard to irrigation he says: "The objections against the curette hold in general against the douche. It should be used but once, and then only as a part of primary cleansing. Except in the presence of loose débris there is no occasion for douching. When required, use only normal saline or boiled water, as its function is purely mechanical. Many deaths have resulted from mercuric and carbolic douching."

Davis and Montgomery of Philadelphia, Frye of Washington, D. C., S. C. Gordon of Portland, Me., Williams of Baltimore, McLean, Pryor and Boldt of New York, have all published papers taking a similar attitude toward the use of the curette.

Pryor reported 36 streptococcus cases with a mortality of 4 (or 11%) which he had treated by curetting and packing the uterus with iodoform gauze, then opening the posterior cul-de-sac widely and packing the pelvic cavity with iodoform gauze up to the level of the broad ligaments. The good results were probably due to the curetting. Recent literature shows a number of men, among them Mann of Buffalo, who have tried and recommended Pryor's method.

Caruso's alcoholic irrigation with two rubber tubes introduced into the uterus does not appear to show any better results than the regular methods of treatment.

Webster packs the uterus with gauze saturated in glycerinated formalin solution, renewed every twelve hours and preceded by irrigation with peroxide.

The objections to intravascular medication with formalin or other antiseptics are that the bacteria are not always in the blood and that germicides in sufficient strength to destroy them do serious injury to the elements of the blood. Collargol, however, is harmless and worthy of further trial.

The method of Fochier, injecting turpentine into the flank, Hoffbauer's treatment with nuchem with the idea of stimulating cell production, and Oelsner's rest treatment need only to be mentioned.

More or less has been said about hysterectomy, among the conditions where it may be considered are the retention of putrid placenta, suppurations, metritis, septic fibromatosis and severe injuries to the uterus. At the Fourth International Congress of Obstetricians at Rome in 1902 the general feeling seemed to be that hysterectomy for puerperal sepsis was rarely indicated.

The resection of infected pelvic veins has been advocated by Freund, Trendelenburg and other men in Europe, but it is practically untried in this country.

¹Trans. Am. Gyn. Soc., 1899.

C. S. Bacon of Chicago, in the *Jour. Am. Med. Assoc.*, April 3, says: "In saprophytic infection the removal of debris effects a cure; to do this use a dull curette and the douche. In true puerperal infection use the same measures, drainage, irrigation and curetting. But here the curette should be used with unusual care not to break down the protecting zones of leucocytes. After the uterus has once been cleaned, further temperature means extension beyond the endometrium — then, further local measures are useless."

Reynolds and Newell in their textbook state that

"If the intra-uterine involvement is limited to a very mild affection of the endometrium, or to decomposition of the uterine contents, the use of the intra-uterine douche may be sufficient to restore the parts to an approximately aseptic condition, and is then followed by prompt subsidence of the symptoms; but in the majority of cases it fails to remove the whole focus of infection. For this reason, and because the exact condition of the interior of the uterus can rarely be accurately ascertained, even by digital exploration through the patulous os, it is in general the best plan to resort to the use of the curette as a routine in all cases in which the uterine lochia are distinctly foul. This is justified by the fact that the careful use of the curette should never be productive of harm, while the positive results which almost invariably follow the thorough removal of the decomposed contents of the uterus are sufficiently marked to warrant a much more dangerous procedure. The theoretical objection that the curette makes a fresh wound, and that its use is therefore likely to be followed by an extension of the infection is to be answered by the fact that in practice this does not happen, if it is used early and preceded and followed by an antiseptic douche. The best curette for post-partum work is the large placental curette."

"If the disease is well advanced when the diagnosis is first made we must remember that nature's method of cure is by shutting off septic foci by an exudate of lymph, and great care must be taken not to destroy this natural protection. In neglected cases any large superficial masses which are present should be removed gently, without breaking down the defence, and then all local meddling must be absolutely given up. Too great emphasis cannot be laid on the importance of an early diagnosis, as this alone allows us to make a clean removal of the disease."

In regard to douches these authors say that "although intra-uterine injections are of limited value by themselves, they are of great use in keeping the interior of the uterus clean after the major portion of the diseased tissue has been removed by the curette." So much for the literature of the subject.

In the early eighties I began to wipe out the interior of the uterus, using an extra long pair of forceps which I had made for the purpose. This gave me much better results than those following the simple washing out of the uterus with a solution of bichloride of mercury or permanganate of

potash. When Reynolds gave us his long uterine curette I began to use it, and have never seen any good reason for not continuing to do so. In fact, the more cases I see the more I am convinced that such treatment is both safe and rational.

I have never been able to understand how the puerperal uterus can be cleaned out safely in any other way. Many recommend using the fingers for this purpose, but a uterus which is six to ten inches in depth cannot be explored without introducing the hand into the vagina, or even into the uterus itself in many cases, a procedure which to my mind is vastly more dangerous and less satisfactory than using the curette. I have found a weak solution of formalin to be safe and satisfactory for irrigating the uterus after curetting. Mercuric solutions, unless very weak, are not free from danger.

Fortunately, the milder type (the putrid) of puerperal sepsis is the most common form met with, but this, if left to itself, or in cases where nothing is done until the disease is well under way, becomes very threatening to the patient's life and it is only by the use of heroic measures that the cases are prevented from going on to sure death. The first case which I have reported is a good illustration of such a condition, and I feel sure that this patient's life was saved by the cleansing of the uterus.

If the disease can be recognized early, before the system has absorbed sufficient toxic material to become overwhelmed by it, much can be expected from a careful and thorough cleaning out of the uterus. It should be remembered that a rise of temperature in a woman having been delivered of a child means that something is going amiss, and that the most likely cause for such a rise of temperature is septic poisoning. Having this in mind, one should not wait until after a chill before learning definitely, if possible, the cause of the rise of temperature. Prompt treatment instigated now will prevent, in a majority of cases, serious trouble, while after a chill has occurred our efforts may be entirely without avail.

Clinical Department.

THE OBSTETRICAL SOCIETY OF BOSTON.

MEETING OF JAN. 24, 1905, DR. C. H. WASHBURN, JR. THE CHAIR.

DR. E. H. STEVENS read a paper entitled

PUERPERAL SEPTICEMIA.¹

DR. J. BAYST BLAKE: I would like to ask the reader whether it was not possible to have made a blood culture in some of these cases. In most of them a streptococcus infection was probably present, but if not it was hardly fair to expect much from an antistreptococcus serum.

DR. J. G. MUMFORD: It seems to me that the authorities quoted are rather ambiguous about their use of the curette; one speaks of its routine use and the other of its indiscriminate use, leaving it to be inferred that it is sometimes used.

¹ See page 12 of the JOURNAL.

Dr. F. B. HARRINGTON: While in recent years I have had no experience in fresh puerperal cases, in other uterine infections I like the method of wiping out the uterus rather than washing it out. At the Massachusetts General Hospital I see many cases of pyosalpinx where it is advisable to curette and in them it is my custom to wipe the uterus out. To be sure these cases of gonococcus infection are not quite the same as when a streptococcus infection is present. At the hospital we occasionally use the serum. I have just had a severe case of streptococcus phlebitis following a myomectomy. I allowed my house officer to use the serum, but there was no obvious effect. The patient was very ill and thoroughly septic, losing one eye from an inflammation of the choroid, but she finally recovered. Some ten years ago I saw a case of severe sepsis in a young colored woman following an abortion. After watching her some ten days I opened the abdomen and was somewhat surprised to find practically nothing beyond a marked engorgement of the veins of the pelvis due probably to a septic phlebitis. In such a case I should now certainly use the serum as that is practically the only hope we have.

Dr. W. F. WHITNEY: The first case of the reader might be more properly called "Putrid Intoxication" rather than "septicemia." The other case was apparently true septicemia.

Dr. F. S. NEWELL: I remember a case where the curette showed a pure culture of streptococcus, and streptococci were present in the blood yet complete recovery at once followed a single curettage.

I would divide these cases into three groups: First, putrefactive infection; cured by washing out. Second, mixed staphylococcus and colon bacillus infection; cured by curetting and washing out if the case is seen early enough. Third, pure streptococcus infection, or only slightly mixed, where the symptoms develop in the first twenty-four hours. This class of cases must be curetted at once, in the first forty-eight hours, or else the curette does positive harm by spreading the infection. I think these cases can be helped by washing out every four to six hours with salt solution and filling the uterus with alcohol to be absorbed. I believe also in washing the blood out with salt solution. I have seen the serum tried pretty faithfully but have not noticed any benefit nor has the use of the silver salts injected into the blood seemed to me of the slightest use. It is a good rule to make sure of the uterus being empty before it is possible to make a positive diagnosis.

Dr. J. G. BLAKE: From what I have seen of the serum treatment I am convinced that it is at least worth further trial. The great trouble is that it should be given in much larger doses than is customary and this has heretofore been prevented by the almost prohibitive cost. I am sure that if it were used in large quantities much better results would be shown.

Dr. W. E. BOARDMAN: Having been out of obstetrics for some years I am greatly surprised that there is apparently so much puerperal sepsis to be seen. It would seem as if it might be worth while to emphasize the necessity of the strict precautions that were in vogue a few years ago when at the Lying-in-Hospital sepsis was practically unknown.

Dr. STEVENS, in conclusion: As to the blood examination, any one who sees much of puerperal sepsis in consultation generally has to work pretty promptly, and cleaning out the uterus and using serum is apt to be necessary as a last resort. For that reason while in many cases I have had bacteriological examinations made I have generally pursued my treatment without waiting for their result. I began wiping out the uterus in the early eighties and when I reported some cases

at the Medical Improvement Society I was much criticized. At that time after wiping out with cotton I was in the habit of packing the uterus with iodoform gauze. This packing I have since abandoned as I am convinced it does harm. When I began to use the curette it seemed as if I were getting better results than with mere wiping. In putrid cases wiping is enough, or as good as curettage. I see at least a dozen cases yearly of puerperal sepsis as a consultant, so it must still be fairly common.

I was for a long time sceptical as to the value of the serum, but seeing its apparent great value in five cases of malignant endocarditis last winter where the patients were desperately ill and recovered after the use of serum in large doses—sometimes as much as 250 cc.

I was led to try it in puerperal cases and in some the happy result was more than could be expected. I agree with Dr. Blake that it is unfortunate that the expense makes it difficult to use the serum in the quantities that should be used.

I agree with Dr. Whitney that the putrid cases are not true septicemias, but I feel as I look back over thirty years of clinical experience that a little delay might have turned them into true septic cases.

In every large community the number of cases of puerperal sepsis, and deaths from it, for that matter, is still comparatively large. There is a feeling among the younger men that they will be held responsible for cases occurring in their hands and they are unwilling to recognize it and consequently do not treat it promptly enough. I was present last summer at a trial where the claim was made that sepsis was due to the negligence of the attending physician, showing that another danger has arisen to confront the physician.

Dr. E. H. STEVENS showed a specimen of untwisted tubal pregnancy.

Reports of Societies.

AMERICAN ORTHOPEDIC ASSOCIATION.

NINETEENTH ANNUAL MEETING, HELD IN BOSTON, JUNE 6, 7 AND 8, 1905.

(Continued from No. 26, p. 730, vol. cliv.)

SKINOGRAFIC REVELATIONS IN RACHITIC DEFORMITIES OF THE LEGS.

Dr. WALLACE BRANCHARD of Chicago said that the correction of over seven hundred cases of genu valgum and genu varum by rapid osteoclasis furnished opportunities for many skinographic comparisons before and after obliteration of the deformities. Corrected knock-knee tibia had uncorrected bow-leg femurs, thus producing bow-legs; conversely, corrected bow-leg femurs had dislocated knock tibiae, creating knock knees. These have been designated "transference cases." Unsuspected unilateral coxa vara had been revealed by the correction of unilateral knock knee. Coxa vara is frequent but covered by more apparent deformities. A weak epiphyseal attachment caused one epiphyseal cysts in the use of the Gatten osteoclasis. This was the only instance in over three hundred supracondylar osteoclasis. Skinographs of a femur revealed an acute angle at the fracture point and the osteoclasis a longitudinal line bisecting over the head and impacted sides. A dark shadow marked the extent and degree of myelitis. Skinograms of femurs showed only the slightest shadows after extensive fracturing and redressment. Skinographic studies of a number of cases representing the varying types of rachitic deformities of the legs were presented.

A STUDY OF BOW-LEGS.

DR. JOHN DANE of Boston read this paper, in which he stated that he wished to question the accuracy of the belief that the deformity in bow-legs is an outward bowing. The question of an outward or an inward bowing he regarded as a question of what was the proper lines to measure from. If a vertical line down the shaft of the femur is taken, then the tibia is bowed inwards. This bowing is probably caused by the cross-legged position assumed by the child before it begins to stand. The action of muscles could not produce such a bowing as has been contended, because before producing such a condition they must of necessity produce an equino-varus. After the tibiae once curved, the altered statics lead to abduction of the femora, and this predisposes to anterior bowing of the shaft and coxa vara.

DISCUSSION.

DR. H. AUGUSTUS WILSON of Philadelphia asked for some expression of opinion as to the question of spontaneous cure in bow-legs.

DR. R. H. SAYRE of New York said that for several years he had observed that, as described by Dr. Dane, the curve in bow-legs most often occurred at about the point of crossing of the legs, but it had not occurred to him before that the cross-legged position might be an etiological factor. Also he had observed in cases of anterior bow the curve occurred at the point on the legs where they projected beyond the lap of the another, and considered that the weight of the unsupported foot and leg was a cause in producing the bow. One case was reported where there was spontaneous recovery from bow legs, but such cases were considered rare. In the correction of such deformities his preference lay with the use of the osteoclast except in those cases where the curve was close to the joint, when the open operation and chisel were better, because in such cases the osteoclast produced the break too far from the joint.

DR. B. E. MCKENZIE of Toronto said that it was his custom in dealing with bow-legs under three years of age to instruct parents in massage and manipulations, and that 90% of his cases recovered without further treatment.

DR. HENRY LING TAYLOR of New York called attention to the inward rotation in bow-legs and urged that after osteoclasis, outward rotation should be made to overcome this tendency.

DR. JOHN RIDLON of Chicago said that in his experience it was unnecessary to do a tenotomy of the tendo-Achilles in cases of anterior curvature. He had always been able to overcome the deformity after the bones were broken by manual effort. In some cases of bow-legs he thought there might be some tendency to out-grow the deformity, but certainly cases where it had occurred were rare.

DR. PHIL. HOFFMAN of St. Louis reported the findings in a number of radiographs taken of cases of knock knees. He had always observed a bowing-in of the upper end of the tibia and occasionally of the lower end of the femur.

DR. FRANK E. PECKHAM of Providence thought that spontaneous cures in bow-legs had taken place in a number of cases under his observation. Some of them were of a severe type. Tenotomy of the tendo-Achilles was regarded as unnecessary in cases of anterior curvature.

DR. BLANCHARD, in closing, contended that the question of tenotomy in anterior curvature was largely a question of physical strength on the part of the operator. Aside from this consideration, he thought

the foot could be held in better position after tenotomy. In early cases spontaneous recovery might take place except in cases with eburnation of bone, when recovery would be impossible. Manipulation and massage by the mothers were largely responsible for many of the so-called spontaneous cures. In over one thousand cases non-union had not occurred in a single case, and must be extremely rare in this country. Another point made was that in the abduction of the femur there was a change in the position and direction of the neck not necessarily coxa vara. The neck of the femur might be nearly horizontal when the femur abducted, but when the femora were parallel, the position of the necks would be found normal. This might be called simulated coxa vara. True coxa vara is associated with bow-legs, but less often than is apparently the case.

DR. DANE believed that there were natural corrective tendencies in some cases and had observed a number that did make recoveries without formal treatment. He emphasized his belief that bow-legs should be considered as essentially an inward and not an outward bowing.

CONCLUSIONS DRAWN FROM A COMPARATIVE STUDY OF THE FEET OF BAREFOOTED AND SHOE-WEARING PEOPLES.

DR. PHIL. HOFFMAN of St. Louis gave at length the results of a study of one hundred and eighty-six pair of primitive feet, for the most part Filipinos and native Africans. Also a study of the feet of shoe-wearing Caucasians and negroes. As a result of this study, the following conclusions were drawn: The relative lengths of the foot and its component parts are the same in barefooted and shoe-wearing races. Its form and function are the same up to the time of shoe-wearing, after which characteristic deformation and inhibition of function ensue. These acquired characteristics are not transmitted to progeny. The naked foot presents peculiar plantar and dorsal skin markings due to function. The height and shape of the longitudinal arch have no bearing on the strength or usefulness of the foot, unless existent lowness in an individual is a transition from an originally higher state. There is no exclusive type of arch, as the normal, which includes high, medium and low. There is no relationship between the height of the arch and the character of the gait. While the straight position of the foot is the one generally found among primitive people, the everted position is also found. The normal position of the great toe is one in which a prolongation of its axis passes through the center of the heel. A few years of shoe-wearing, as shown by certain African tribes who adopted shoes after the Boer war, suffices to induce deformity. Such compression of the feet as is necessary to produce deformity may be entirely painless.

DISCUSSION.

DR. F. HALSTED MYERS of New York believed that the statement made that the height of the arch and general shape of the foot was not a measure of symptoms was equally true as applied to shoe-wearing races.

DR. JOHN RIDLON of Chicago said that all painful conditions of the foot relieved by the use of an arch supporter could not properly be regarded as cases of flat feet. Such symptoms might arise from a lack of normal dorsal flexion due to a shortening of the calf muscles or what Shaffer calls a non-deforming club-foot.

Discussion also by DR. H. L. TAYLOR, New York, and DR. A. H. FRIEBERG, Cincinnati.

CONGENITAL ABSENCE OF THE TIBIA.

DR. F. HALSTED MYERS of New York reported this condition occurring in boy, aged two. The head of the fibula articulated loosely with the upper and posterior part of the external condyle of the femur, with the foot in marked equino-varus. The leg was habitually flexed and adducted, with slight power of flexion and extension. The child was not able to walk and went about on its knees. At the time the case was first seen there had already been performed a tenotomy of tendo-Achilles with the application of plaster splints without improvement. The fibula was transplanted by the author, necessitating certain interference with the soft structures around the joint. Arthrodesis was performed at the ankle. After one year the boy could flex his leg 90° and almost fully extend it. His power increased rapidly and he walked about all day. A review of the literature showed congenital absence of the tibia to be the rarest of congenital defects. Only forty-six cases of partial or entire absence of this bone were found. In older children it had been regarded as an almost helpless condition. Usually amputation was done on account of great instability of the joint and progressive shortening.

THE DESIRABILITY OF REPLACING CONGENITAL HIP DISLOCATION IN INFANCY.

DR. BERNARD BARTOW of Buffalo contended that the ease of reduction and percentage of anatomical cures increase as the operation is performed more closely to the age when the child should walk. The present lower age limit is arbitrarily placed between the second and third years. Objection to further approximation of the reduction maneuver to the infantile age is based on the difficulty of maintaining cleanliness of the retention dressings. He believed that sufficient importance was not attached to changes occurring in the head and soft parts during the two or three years following birth. These were elements which increased resistance to reduction and diminished the security of replacement and the opportunity for anatomic restoration, compared with the lesser pathological changes present at the walking age. The difficulty of caring for a child at the walking age was not thought to be a barrier to lowering the age limit. A shorter period of splint retention is necessary and there is probably an increased percentage of anatomic restorations. The cast may be extensively cut away on the lateral and posterior thigh portions, leaving a bridge about three inches wide connecting the pelvic girdle with a girdle encasing the lower third of the thigh. No deficiency of support seemed to follow. Several cases were reported showing a period of splint restraint shorter by three or four months than could have been safely contemplated at the age of two or two and one-half years. In five unilateral cases where treatment was begun prior to the second year, anatomic cure was obtained in all. Four of these cases were sixteen months of age or younger.

A STUDY OF THE ANATOMY OF CONGENITAL DISLOCATION OF THE HIP AFTER MANIPULATIVE REDUCTION.

DR. NATHANIEL ALLISON of St. Louis, by invitation, presented a study of a typical case of double congenital dislocation of the hip occurring in a girl of seven, reduced by the Lorenz method. Four months after operation the child died of tuberculous meningitis and the pelvis was obtained at autopsy. The specimen was carefully studied as to the condition of the muscles, nerves, joint capsule, acetabulum and head of the femur. The strength and shortness of the iliofemoral band was such as offered an absolute resistance to a return of the hip to a normal position. Forcing extension would have resulted in dislocation. The head

of the femur was conical and the neck abnormal. The acetabulum was shallow, triangular in shape, with the base posterior. The writer then made a comparison of the anatomical conditions found in this and other so far reported cases.

DISCUSSION.

DR. JOHN RIDGEL of Chicago said that theoretically he agreed with Dr. Bartow in his contentions, but practically he could not. He had had experience in one case seventeen months old and it was such that he at that time decided never to operate upon so young a child again. He believed it to be the experience of those who had operated upon cases under two years of age that while reduction might be more easily accomplished, it was more difficult to retain the head in position. The older cases, offering difficulties to reduction, oftentimes when once reduced stay securely in position. He believed, on the contrary, that the older cases did not require as long a period of immobilization. The younger cases, after eight or ten months in plaster, the head still slips out of the acetabulum. He thought it likely that other muscles besides the adductors acted as stays to keep the head in place, and that this retentive force is absent in young children. In conclusion, he said that he did not yet know what factors lead up to a perfect anatomical result.

DR. H. AUGUSTUS WILSON of Philadelphia said that while upon a theoretical consideration it might appear that early replacement was desirable, the fact remained that in the inability of the child to walk, an important factor in the production of good final results was lost. No two cases are alike and the procedure adopted should depend upon a study of the individual characteristics of each case. He had used a solution of rubber to coat the cast and make it waterproof as recommended by Hoffa, and found it satisfactory in protecting the cast from moisture.

DR. BARTOW, in closing, said that his cases were too few in number to establish a precedent. His experience, however, had not led him to the same conclusions as those gentlemen who had discussed his paper.

SECOND DAY, WEDNESDAY, JUNE 7, 1905.

DR. E. H. BARTOW of Boston gave a clinical demonstration of the pathology and methods of treatment of congenital dislocation of the hip at the Children's Hospital, with an exhibition and demonstration of a machine for reducing congenital dislocation of the hip, by Mr. R. W. Bartlett of Boston.

DEMONSTRATION AND EXHIBITION BY LANTERN SLIDES OF LESIONS IN NON-TUBERCULOUS ARTHRITIS.

DR. I. H. NICHOLS of Boston, by invitation, gave this demonstration of the changes undergone by the bones, joints and cartilages in chronic non-tuberculous arthritis, showing the processes of thickening, erosion, fibrillation, ossification, and the formation of joint mice and osteophytes. A tentative classification, based upon the pathology was suggested and it was pointed out that a satisfactory clinical classification was not possible.

SKELIOTOMIC DEMONSTRATION OF LONG CHANGES IN OSTEOARTHRITIS.

DR. E. A. WELCH of Rochester gave this demonstration and showed a number of skeliotomic and osteoarthritic conditions in various stages.

DISCUSSION.

DR. REGINALD H. SEYMOUR of New York said that a number of different conditions had been met with in the same pathological process, and that the

number of processes called by the same name. Probably a number of etiological factors were to be assigned. Much was yet to be learned of the condition. He wished to urge the importance of mechanical treatment in these conditions. It seemed to him that the process was to be regarded as essentially an inflammation, sometimes of the subacute variety, with distinct indications for local protection of the joint. This idea seemed to have been lost sight of by orthopedic men. A number of cases were reported in which the application of a splint had relieved the pain, increased motion and apparently stopped the process.

Dr. G. C. DAVIS of Philadelphia thought that an endeavor should be made to prevent the deformity. Fixation should be used not only for protection and the alleviation of the immediate symptoms, but for the prevention of deformity. Another point was the question of obtaining motion in such joints. Passive movements might be used to break up adhesions under ether, but in his experience they reformed with greater involvement. Considerable might oftentimes be done by the use of an apparatus as a pendulum which would "jog" the joint to an extent not sufficient to produce severe or lasting pain. This method he believed could be applied with good results to the small joints of hand and fingers and perhaps also of the elbow, wrist and knee.

Dr. J. E. GOLDTHWAIT of Boston believed that when the subject was studied further, the difficulty of satisfactorily classifying the different conditions would disappear. Some of the types now recognized would later come to be recognized as stages of the same process. He had found infection of low grade associated with a number of cases with fringe formation in the joints and believed this to be one of the causes of fringe formation.

Dr. NICHOLS, in closing, said he thought it better to attempt to make a diagnosis of a certain condition rather than a particular disease. He believed that the same cause might result in a varying number of processes. A patient with a number of affected joints might present all the types, so-called. As to treatment, many of the cases were considered hopeless because of extensive destruction in so far as restoration was concerned. In the early cases, protection, fixation, baking and passive congestion might give nature a chance to effect a cure; those of infectious nature with organisms of low grade, opening and drainage. In cases with erosion and chondrification, excision while resulting in a fixed joint might relieve the pain.

A REPORT ON THE ADULT WARD FOR WOMEN IN THE HOSPITAL FOR RUPTURED AND CRIPPLED FOR TWO YEARS, ENDING MARCH 1, 1905.

Dr. V. P. GIBNEY of New York made this report, detailing the number and character of conditions with the immediate and final result indicated in each case so far as possible. The method of treatment was given. He spoke of the great advance made in adult orthopedic work in New York. The ages of the patients varied from fifteen to sixty-seven, covering a wide range of conditions.

CONCERNING PATTERNS OF THE SPINAL CURVE OF PATIENTS WITH PLASTER JACKETS FOR POTT'S DISEASE. HOW THESE MAY BE USED WITHOUT DISTURBING THE JACKET TO DETECT SLIGHT CHANGES OF THE CURVATURE.

Dr. AUG. THORNDIKE of Boston presented this paper together with the apparatus used for the estimation of the kyphosis. It was designed to detect

recurrence of deformity, as it affords the means of making careful measures from time to time. If progress of the case was by this means found to be unsatisfactory, the application of a new jacket would be indicated. If recovery progressed properly, unnecessary disturbance could be avoided. The use of a modified "hammock" method of applying jackets had been found most satisfactory and was described in the paper.

AFTERNOON SESSION.

After an inspection of the building, work and methods of the Industrial School for Crippled and Deformed Children, the afternoon program was taken up in the school building.

RIGID SPINE: A STUDY WITH A REPORT OF FIVE CASES. AUTOPSY.

Dr. GEO. R. ELLIOTT of New York, in a paper of this title, reported two cases of rigid spine of the Strumpell-Marin type, in one of which an autopsy report was given with exhibition of the vertebral column. Another case was of the so-called Bechterew type. A new classification was presented for consideration, in the belief that the one in use was unsatisfactory because of grouping entirely different conditions under one head. It was urged that more careful investigations of the pathology and clinical aspects be made.

DISCUSSION.

Dr. J. E. GOLDTHWAIT of Boston believed that the traumatic cases of rigid spine were in reality cases of arthritis deformans with the trauma as an exciting factor. He thought the reason for the referred pains — intercostal neuralgias and neuralgias of the arms and legs — were very readily explained by the pressure in the foramina. In those cases in which the hypertrophic change took place in the laminae of the dorsal region, the costo-vertebral articulations were involved with ankylosis, so that thoracic movement was limited. In such cases the prognosis would be less good.

COXA VARA ADOLESCENTUM AND OSTEO-ARTHRITIS DEFORMANS COXA.

Dr. A. H. FRIEBERG of Cincinnati said that investigation of the subject had revolved the condition of bending of the femoral neck into a number of components depending upon a number of morbid processes. Mayol (1897) called attention to the fact that osteoarthritis deformans occurs in juvenile form and simulates non-symptomatic coxa vara. Pathological investigation has shown this condition to be far from rare in youth, requiring it to be taken into account more carefully in the differential diagnosis of coxa vara. The contention that the juvenile form is always traumatic is no longer tenable. Two cases were reported in which this condition came on after adolescence with symptoms precisely those of essential coxa vara. The differential diagnosis was made only by the x-ray, which showed the process to be one of yielding of the femoral neck. The importance of differential diagnosis in reference to treatment and ultimate prognosis was insisted upon.

DISCUSSION.

Dr. J. E. GOLDTHWAIT of Boston said that he had seen a similar case to those reported with bilateral involvement in which an osteotomy was deemed inadvisable.

Dr. REGINALD H. SAYRE of New York reported a case which he had seen showing symptoms of unilateral incipient hip disease. X-ray demonstration showed

the head and neck porous, a condition which must have existed for some time before the development of symptoms. No deformity had taken place, but doubtless would have resulted in a short time. A splint was applied to take the weight of the body from that leg.

FRACTURE OF THE CERVICAL SPINE.

DR. REGINALD H. SAYRE of New York, in discussing this subject, reported a number of cases in which a satisfactory result had been obtained, showing the condition not to be necessarily fatal. The deformity produced by the condition resembled wry-neck. Treatment consisted of rest in bed, the application of a jury mast and plaster jacket extending over the head and neck. In cases where the patients have been allowed to stand upright too soon without support to the head, the paralysis which accompanies nearly every case has returned. If the fracture does not unite completely, pressure paralysis will be caused in the arms and sometimes in the legs through change in the relation of the fragments. These symptoms can often be removed by supporting the head and by degrees restoring the relations of the parts more nearly to the normal. In a certain number of cases, support can be dispensed with after a time without the recurrence of paralysis. In some cases operative interference is necessary to obtain a cure.

PERIARTHRITIS OF THE SHOULDER. REPORTING EIGHT CASES.

DR. HOMER GIBNEY of New York, by invitation, reported eight cases of periartthritis of the shoulder, six of which were the result of a fall. In three the diagnosis of rheumatism was made, in one a contusion, and others showed evidence of general involvement of the joints. Treatment consisted in breaking up adhesions under ether, after which hot compresses applied, massage, Paquin thermo-cautery. A circumflex neuritis was thought to have been associated with the condition.

MULTIPLE OSTEOMA.

DR. G. G. DAVIS of Philadelphia reported two cases of multiple osteoma. One occurred in a man fifty-three years of age, who gave no history of a similar affection in any other member of his family or relations. Trouble began at twelve without an apparent traumatism as a cause. The deformities were of the type of both exostosis and osteophytes, generally distributed over the body.

The other case occurred in a child and were extensively distributed over the body. The facial bones were not enlarged in either case, although in the second case there was heading of the ribs and enlargement of the epiphyses, with funnel breast. Syphilis was excluded as a cause in either case.

DISCUSSION.

DR. HENRY LING TAYLOR of New York reported the occurrence of a similar condition occurring in three children, brothers and sisters, ranging from six to fourteen years of age, all seriously affected with gradually growing, painful tumors producing deformity. There was not a similar affection in the mother, but the father complained of considerable stiffness in the joints.

DR. H. P. H. GALLOWAY of Toronto had seen a similar case, eighteen years of age. The trouble first began at nine years of age with growth upon the bones of the feet and near the shoulder. These were removed and did not return, but other enlargements appeared in

large number over the body. They were painless except two that caused pain on sitting. These were removed with very great ease. Most of the growths were near the epiphyseal lines.

DR. A. H. FRIEDBERG of Cincinnati reported a case in which a similar affection had existed for three generations. The patient was a boy of eighteen who submitted to operation for an aneurism, caused by one of the growths in the popliteal space. The growths were situated near the joints in such a way as to mechanically interfere with free motion.

DR. DEXTER D. ASHLEY had seen an instance where the affection had run through four successive generations of the same family.

DR. L. A. WEIGEL did not consider that all such cases should be regarded as asseomata, but rather gave evidence of being a general disease of the osseous system and not a localized disease.

THIRD DAY, THURSDAY, JUNE 8, 1905.

DR. J. E. GOLDTHWAIT and DR. C. F. PAINTER of Boston gave a clinical demonstration at the Massachusetts General Hospital, of cases illustrative of the various forms of bone and joint disease met with in adults, with an operation on the knee joint. Also several cases of osteo-arthritis of the spine and hip and several cases of injury and disease of the pelvic articulations were shown.

DR. E. A. CODMAN of Boston by invitation, gave a demonstration of the surgical anatomy of periartthritis of the shoulder joint.

AN ANALYSIS OF 152 CASES OF HALLUX VALGUS IN 77 PATIENTS, WITH A REPORT UPON A NEW OPERATION FOR ITS RELIEF.

DR. H. AUGUSTUS WILSON of Philadelphia considered improperly shaped shoes and stockings as a frequent cause of hallux valgus. The most potent etiological factor was considered to be eversion and pronation of the feet. It was further stated that hallux valgus was usually synonymous with bunion but either might occur separately. The condition was found to exist in about 20% of 397 women examined for the condition. It was said to occur much more frequently in women. Apparent exostases existed clinically in about 92% of the cases. Radiographic examination show a much lesser number of exostases and showed the inner aspect of the distal extremity of the metatarsal at bone protruding in such a way as to clinically simulate a true exostosis. Pronation of the feet was shown in 80% of the cases and eversion present to a slightly greater extent, causing the final propulsive spring of the foot to fall upon the bunion joint further increasing and aggravating the condition. In 23% of the cases flat-foot was associated condition. There were found in addition widening of the space between the first and second metatarsal bones with oftentimes a curve in the length of the first metatarsal, displacement of the first phalanx of the great toe with angular deformity, hypertrophic enlargement of the head of the metatarsal bone. The operation consisted in removing the projecting portion of metatarsal bone, after excision of bursa, and placement of the toe in the reversed divergent position, passive movements in two weeks and resumption of walking in three. Results were entirely satisfactory in cases reported.

DISCUSSION.

DR. JAMES K. YOUNG of Philadelphia said that in such cases requiring bone operations he made use of a linear osteotomy performed just back of the bunion and the results achieved were entirely satisfactory.

DR. NEWTON M. SHAFFER of New York had had good success in the treatment of a certain number of cases of hallux valgus caused, he believed, by shortening of the gastrocnemius by the application of a traction shoe.

DR. HENRY LING TAYLOR had formerly taken an oblique bite from the inner condyle, but had gradually increased the amount of bone removed until the entire head removed by means of ordinary transverse bite. Some motion was left and the damage to the arches of the foot was considered inconsiderable.

DR. CHARLES F. PAINTER of Boston said that he believed that a considerable number of cases could be cured without operation by restoring proper static conditions of the foot and the use of proper shoes and stockings. Exostoses were considered as irritative in origin. Mueller's operation had given good results, and he did not consider the objections that had been urged against it valid.

DR. REGINALD H. SAYRE had seen a case in which reduction of the deformity accompanied by a loud snap has resulted from adduction of the toe. He thought possibly some operation might be devised by which cutting of soft structures would cause reduction of deformity.

DEMONSTRATION OF MACHINE FOR CORRECTION OF DEFORMITIES AT THE HIP FOLLOWING HIP DISEASE AND FOR HOLDING THE LIMB IN CORRECTED POSITION WHILE PLASTER IS APPLIED.

DR. JOHN RIDLON of Chicago exhibited the machine and gave a demonstration of its use.

ACHILLOTOMY AND FASCIOTOMY IN A PATIENT SEVENTY-TWO YEARS OF AGE.

DR. A. R. SHANDS of Washington reported a tenotomy and fasciotomy upon a patient of seventy-two for the relief of equino-varus, the result of poliomyelitis. The operation was performed under cocaine, and plaster applied for three weeks. The result was entirely satisfactory and the patient could walk with ease and comfort.

DISCUSSION.

DR. FRANK E. PECKHAM of Providence had performed a tenotomy upon a patient of seventy, with good union following.

DR. PHIL. HOFFMAN of St. Louis had performed a tenotomy upon a patient aged forty-five years of age in the endeavor to relieve a contracture, the result of infantile paralysis. Twelve days later an amputation was necessary. Examination showed good union taking place in a limb devoid of muscular fibres and made up of muscle sheaths, fat and connective tissues.

INVESTIGATIONS ON THE VALUE OF TRACTION IN THE TREATMENT OF HIP DISEASE.

DR. E. H. BRADFORD of Boston in his paper said that although the advantages of traction in the treatment of hip disease had been abundantly shown, the benefits to be derived had been questioned by some writers, and that a further demonstration of the value of this method would be of use. It may be assumed that bone affected by tubercular osteitis may, under favorable conditions, be transformed into a healthy state, and that constant irritation and bruising of the diseased portion of the bony structure is unfavorable in repair and cure. An examination of a number of specimens of advanced hip disease showed indisputably the forcible crowding of the head of the femur upwards and backwards, leaving the lower portion of the acetabulum opportunity for early repair. Corresponding changes had taken place in the head of the femur.

It was manifestly desirable in placing the bone in a condition favorable to repair that this crowding should be prevented. By a series of skiagrams taken of patients suffering from hip disease and subjected to various degrees of traction, it had been demonstrated that traction could be used so as to prevent this crowding. Distraction caused by traction should vary in the different stages of hip disease.

DISCUSSION.

DR. PHIL. HOFFMAN of St. Louis said that he had a specimen obtained from a boy suffering from hip disease, who died of meningitis, that showed very well the crowding of the joint. The bone disease was located in the epiphysis and pus had just broken into the joint, although microscopically and macroscopically there was no evidence of tuberculous involvement of the joint, yet there was a decided flattening of the cartilages with a wearing away of the joint surfaces.

DR. R. H. SAYRE of New York was firmly convinced of the value of traction, not only in hip cases, but in knee and ankle cases as well.

DR. NEWTON M. SHAFFER of New York pointed out how closely the ideas set forth in the paper corresponded with the principles of C. F. Taylor years before, who had based his treatment, not upon a knowledge of the pathology, but upon empiricism.

DR. C. W. WILSON of Montreal said that notwithstanding the arguments which had personally been urged upon him by distinguished foreign orthopedists, he was convinced of the value of traction and continued to use it.

A STUDY OF THIRTY CASES OF CHRONIC NON-TUBERCULOUS JOINT DISEASE OCCURRING IN ADULTS, WITH SPECIAL REFERENCE TO SOME OF DOUBTFUL IDENTITY.

DR. HAROLD W. JONES of St. Louis, by invitation, read a paper in which a study was made of non-articular joint lesions of non-tuberculous origin, involving the ankle, knee, hip, shoulder, elbow and spine. Syphilis was the etiological factor in one case and gonorrhea in three others. The cases were divided as follows: (1) Cases characterized principally by hypertrophy of the joint. Seven cases were included in this group. (2) Cases characterized principally by atrophy of the joint. One case was included in this group. (3) Cases of undoubted infection, in some of which erosion of the articular surfaces was demonstrated. There were five cases in this group. (4) Cases of probable peri-arthritis, in which infection was at least uncertain and which no permanent changes in the joint could be shown. In this latter group seventeen cases were included. In the entire series osseous hypertrophy occurred entirely in the male sex and in the weight-bearing joints. Exposure to sudden changes of temperature and occupation trauma were not found to be an important etiological factor, except in the shoulder, often the seat of disabling joint lesions, where trauma was regarded as an important factor. Moderate success only was achieved in the treatment of the cases.

A FRAME FOR HOLDING A PATIENT WITH A FRACTURE OF THE SHAFT OF THE FEMUR WHILE PLASTER-OF-PARIS IS APPLIED.

DR. FRANK E. PECKHAM of Providence described a frame designed to support the body and make extension with sufficient force to pull the leg down to length and hold it there firmly until the plaster is applied and completely set. The plaster should take in the whole body, from the axillae down to and including the fractured leg.

A MODIFICATION OF THE DOLLINGER BRACE FOR CERVICAL AND UPPER DORSAL, POTT'S DISEASE.

DR. R. T. TAYLOR of Baltimore described a brace to be used in Pott's disease, which was claimed to be rigid, durable and light. The brace was made from plaster-of-Paris bandages braced with steel from a corrected cast of the back and head.

A MODIFICATION OF THE BACK BRACE FOR POTT'S DISEASE.

DR. AUG. THORNDIKE exhibited a brace designed to obtain uniform pressure over the line of the transverse processes undisturbed by body movements. The neck piece was eliminated and the lung capacity increased by keeping the shoulders back and elevating the ribs by the action of the serratus muscles.

PLACE OF MEETING AND ELECTION OF OFFICERS.

The Association adjourned to meet in annual session in Toronto, Canada, at such time as would be set by the Executive Committee. The following officers were unanimously elected to serve for the ensuing year: President, Dr. B. F. McKenzie of Toronto; first vice-president, Dr. C. W. Wilson of Montreal; second vice-president, Dr. H. P. H. Galloway of Toronto; secretary, Dr. John Dillon of Chicago, re-elected; treasurer, Dr. E. G. Brackett of Boston.

Recent Literature.

A Treatise on Diagnostic Methods of Examination. By PROF. DR. H. SAHLI, of Bern. Edited, with additions, by FRANCIS P. KINNIEUTT, M.D., Professor of Clinical Medicine, Columbia University, New York; and NATHANIEL BOWDITCH POTTER, M.D., Visiting Physician to the City Hospital and to the French Hospital, and Consulting Physician to the Manhattan State Hospital, New York. pp. 1,008. profusely illustrated. Philadelphia and London: W. B. Saunders & Co., 1905.

The translation of a comprehensive foreign work into English is a difficult and often a thankless task. Foreign languages, and particularly German, are sufficiently well understood by many physicians at the present time to permit of immediate reference to the original. There remains, however, a large class of physicians who in spite of general medical attainment have not mastered any foreign language sufficiently to make its use easy. To these persons such a book as the one before us is especially directed, although it will also prove of much value to all but the most expert German scholars. The translation, with certain annotations and occasional added illustrations, has been admirably done by Drs. Francis P. Kinnieutt and N. B. Potter of New York, with the assistance of other collaborators. This volume is a translation of the fourth edition of Professor Sahli's widely known and deservedly popular treatise on diagnostic methods. The book is peculiarly comprehensive in scope and covers the entire field of internal medicine, including the skin, from the general diagnostic standpoint. Although diagnostic method is its professed aim, the author does not hesitate to discuss

pathological and clinical matters in a much more complete way than is ordinarily met with in books of this character. The author insists that his work is not a mere compilation, but rather the expression of personal opinion and experience. He finds fault, and with justice, with the attitude which assumes that a textbook cannot represent an original contribution to medicine and regrets that the journals and periodicals have come to be the sole repositories of medical literature. Unfortunately, the character of many textbooks justifies the popular attitude, but Professor Sahli's admirable work, as many others which have appeared in Germany, are certainly not to be placed in this category. We have no question that the translation will receive wide recognition in this country, as the original has in Europe. It stands as one of the most comprehensive textbooks on diagnostic methods which we have in any language.

A Manual of Chemistry. By ARTHUR P. LUFF, M.D., B.Sc., F.R.C.P., F.I.C., Physician to St. Mary's Hospital, and Lecturer on Medical Jurisprudence in the Medical School; and FREDERIC J. M. PAGE, B.Sc., F.I.C., Lecturer on Chemistry and Physics to the London Hospital Medical College, Examiner on Chemistry and Physics to the Society of Apothecaries, London, Chicago: W. T. Keener & Co., 1905.

The first edition of this manual appeared in 1892 and since then two have been prepared. In this third edition we find a few additions, such as short descriptions of the determinations of the boiling-point and melting-point with the connection between the structure of a substance and its behavior to polarized light. There is also a brief chapter on the composition of some of the substances which have recently come into use as drugs. The work is admirably suited to give a superficial knowledge of both organic and inorganic chemistry.

Lea's Series of Medical Epitomes. Edited by VICTOR C. PRIDGEN, M.D.

Arnall's Epitome of Clinical Diagnosis and Urinalysis. A manual for Students and Practitioners. By JAMES R. ARNALL, A.B., M.D., Professor of Medicine and Clinical Medicine in the University of Colorado, Physician to the County Hospital and to St. Joseph's Hospital, Denver. In one 12mo volume of 244 pages, with 79 engravings and a colored plate. Philadelphia and New York: Lea Brothers & Co., 1905.

A large number of very important subjects are considered in this small volume, but the treatment of each subject is necessarily so brief that it cannot be very valuable. The greater part of the text has been taken from a number of well known works which are still available and well known to date. The intentions of the editor, author and publishers were good, but we feel that it was a mistake to attempt so much in space that

Methods of Organic Analysis. By HENRY C. SHERMAN, Ph.D., Adjunct Professor of Analytical Chemistry in Columbia University. New York: The Macmillan Co. 1905.

In the words of the author, "the purpose of this work is to give a connected introductory training in organic analysis, especially as applied to plant and animal substances and their manufactured products." In the 245 pages of the book we find a substantial consideration of quantitative methods for food materials and related substances, such as nitrogen, sulphur, phosphorus, alcohols, aldehydes, carbohydrates, vegetable and fatty acids, oils, fats, waxes, butter, soaps and lubricants, proteids, and cereals and milk. Most of the portion devoted to aldehydes is given up to the subject of formaldehyde, and we consider this a valuable feature of the work. The book was written primarily for the use of the students in the School of Chemistry at Columbia, but we would favor its adoption by other schools because of its intrinsic worth.

A Textbook of Diseases of Women. By BARTON COOKE HIRST, M.D., Professor of Obstetrics, University of Pennsylvania. Second edition, revised and enlarged. Octavo of 741 pages, with 701 original illustrations, many in colors. Philadelphia and London: W. B. Saunders & Co. 1905.

The second edition of Dr. Hirst's book has been improved by the addition of many new illustrations and a thorough revision of the subject matter. Although there are some sixty additional pages the volume has not reached unwieldy proportions. As a textbook brought up to date it merits all the favorable things we said of the first edition two years ago.

The Channels of Infection in Tuberculosis. Together with the conditions, original or acquired, which render the different tissues vulnerable. Being the Weber-Parkes Prize Essay, 1903. By HUGH WALSHAM, M.A., M.D., F.R.C.P., Physician to Out-Patients, formerly Pathologist to the City of London Hospital for Diseases of the Chest. New York: William Wood & Co. 1905.

The Weber-Parkes Prize is awarded triennially by the Royal College of Physicians of London to the writer of the best essay submitted in competition. The subject selected deals with the etiology, prevention, pathology or treatment of tuberculosis, especially with reference to consumption in man. Dr. Walsham's monograph is of great value. It represents the results of much painstaking work at the autopsy table and at the microscope. While pathologist to the City of London Hospital for Diseases of the Chest, Dr. Walsham made 200 autopsies on subjects of tuberculosis and in every case endeavored to discover the portal of entry of the tubercle bacillus and to trace out the channels of infection.

The importance of this systematic study is shown by the fact that in 26 out of 27 consecutive cases of pulmonary tuberculosis the cervical and bronchial glands were found to be tuberculous. In several cases the infected glands were not enlarged and appeared healthy on naked-eye examination. Detailed notes of the cases are given. From his observations he concludes that the tonsils are frequently affected with tuberculosis. Although the tonsils may be the primary seat of the disease the lesion is usually secondary to pulmonary tuberculosis. In 20 out of 24 consecutive post-mortem examinations the tonsils were found to be tuberculous. In the majority of these cases the tonsils were atrophied.

The second part of the essay is devoted to a consideration of the relations of alcohol and various diseases to tuberculosis. Strong evidence is brought forward to show that tuberculosis of the lungs rarely develops in a case of mitral stenosis. The pulmonary congestion induced by obstruction of the mitral orifice appears to protect the lungs from tubercle bacilli. Pulmonary anemia favors infection. This view is supported by the fact that nearly all cases of pulmonary stenosis die of tuberculosis.

There is throughout the essay reference to the work of other investigators, but the study of the literature has been by no means complete. The book is richly illustrated with 16 colored plates, made from the author's histological specimens. It is printed on thick opaque paper of very light weight, making the volume a convenient one to handle.

The Harvard Medical School. A History, Narrative and Documentary, 1782-1905. By THOMAS FRANCIS HARRINGTON, M.D., Class of 1888. Edited by JAMES GREGORY MUMFORD, M.D., Class of 1888. Illustrated. New York and Chicago: Lewis Publishing Company. 1905.

This work occupies three octavo volumes with a total of 1,650 pages, and was a subscription book. Although by title a history of the Harvard Medical School, its scope is necessarily wider and practically covers, though in less detail, the history of medicine in New England from the founding of the colony of Massachusetts Bay onward. The first volume takes us down to 1827, the second to 1871, and the third to the present year. At the beginning of the first volume is an index of names and subjects and at the end of the third volume an Alumni roll.

The preparation of these volumes has evidently entailed a great deal of labor upon the author and editor, which was in large measure a labor of love. Public records and original documents have been consulted, and private papers, documents and manuscripts as well, and all at first hand. Moreover, the range of subjects, including biographical sketches of individuals, is very large. The work of author and editor is well done; its presentation by the publishers is less satisfactory.

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THE TUBERCULOSIS SITUATION IN BOSTON.

WITH the interest which the tuberculosis question is exciting everywhere, and particularly in Boston at the present time, it is not surprising that the matter of more adequate accommodations for tuberculous persons in this city should be receiving renewed attention. That the number of beds for treatment of the disease, whether in its chronic or incipient form, is wholly inadequate to the demand, is self-evident. It is also not to be questioned that further provision should be made, particularly for the so-called incurable cases. The fact, however, that the means of hospital treatment have been inadequate has not been wholly disadvantageous. It has led to a large amount of instruction as to methods by which persons living at home may still be provided with fresh air and with the means of treatment and possible cure. It would be most unfortunate were hospital accommodations so complete as to prevent this sort of instruction, an admirable example of which is given in Dr. J. H. Pratt's so-called tuberculosis class.

It is, however, recognized that we need more accommodation than we at present have, though it may well be questioned whether it would be wise to construct a large and expensive hospital for this purpose alone in the present state of the tuberculosis problem. Apart from other possible objections, provision for cases of tuberculosis at the Long Island Hospital has very naturally proved totally inadequate to the demand. The inevitable result has been that, although a detached building is provided for tuberculous patients, the number demanding treatment so

far exceeds the provisions of this building that the general hospital is crowded with patients suffering from tuberculosis, although this was the very situation which the erection of the separate hospital was designed to avert. The current report, however, that statistics have shown Long Island to be a totally unfit place for the treatment of the disease should not forthwith be accepted. The type of patient there received is ordinarily a peculiarly hopeless one to treat. His previous habits of life, and the late stage of the disease at which the patient enters the hospital, are far more responsible for his death than the geographical situation of the institution.

We have no present desire to discuss the question as to whether or not it is desirable to extend the facilities for treating tuberculosis at Long Island. The fact remains that further provision should be made especially for chronic and advanced cases. To meet this demand the sum of \$150,000 was set aside four years ago by the city government, but has hitherto not been used owing to the late Mayor Collins' decided attitude that the amount was too small to start an enterprise of this character. As we have previously said, we do not coincide with this opinion. We are, therefore, gratified to see that Mayor Fitzgerald in his inaugural address again reverts to this sum of \$150,000 and urges that it be used for the purpose for which it was originally appropriated. He very properly points out that the buildings required for the treatment of tuberculosis need not be of expensive construction, and that a beginning may well be made with the money now at the disposal of the city toward meeting the crying demand for further hospital accommodation for consumptives. The Mayor closes his remarks on this subject with the following statement with which we are in entire agreement:

"I believe that this board [unpaid trustees] should proceed at once to select a suitable location for such a hospital, and should make an immediate beginning in providing facilities for treatment. The appropriation of \$150,000 may not be as large as will be required soon after the work of this new department gets under way, but in my opinion it is much better to proceed to do something with this amount than to wait for a larger appropriation. Fortunately, the modern method of treatment is such that very simple and inexpensive buildings can be utilized; the treatment is largely carried on in so-called under tents, the freest possible use of fresh air constituting a vitally important feature of it. Indeed, one of the chief benefits from the establishment of such a tuberculosis hospital is the

educational effect on the community at large, for each patient actually treated brings the knowledge of how to treat the disease at home to an ever-widening circle of friends and acquaintances, who thus become active missionaries in fighting this scourge.

"I pledge the fullest co-operation on the part of the executive in taking energetic and effective action to remedy this present great deficiency in the charitable activities of our city."

THE FOOTBALL QUESTION.

IN the present state of public opinion regarding the game of football it is eminently desirable that all possible facts connected with the game be collected and properly digested before any special action is taken. The vague opinion of spectators or the possibly prejudiced attitude of players and coaches should be most carefully weighed before final conclusions are drawn. The moral and physical aspects of the game each need to be thoroughly and impartially investigated; general impressions in this as in other matters of public importance should be relegated to a wholly secondary position. Furthermore, we fortunately have the opportunity for exact observation, the results of which should be made public property.

In this issue of the JOURNAL we publish, so far as we are aware, the first scientific statement of the character, extent and treatment of injuries received on the football field. Dr. Nichols and Dr. Smith have been, during the past season, respectively, surgeon and assistant surgeon to the Harvard University football squad. It will, therefore, not be questioned that they have had a peculiar opportunity, nor will it be denied, a peculiar fitness for the accurate expression of their opinion. It is also not to be questioned that they have approached their problem in an unprejudiced spirit and have deduced conclusions in accurate accord with their observation. Such work as this cannot fail to be of the greatest possible value to the cause of the game, whether or not it does its share toward leading to its reformation. What the public is demanding, and what it has not before had, is just such an authoritative statement of conditions as Drs. Smith and Nichols have given in this carefully prepared report. The meetings of Rules Committees and conferences in general in order to approach the subject intelligently must give due weight to reports such as the writers have presented.

The conclusions reached are perfectly definite and may well provide food for reflection. It is shown that the number and severity of injuries

is much greater than ordinarily believed; that the injuries are inherent in the game itself; that many of the injuries are unavoidable; that the percentage of injuries is very much greater in football than in any other major sport; that the game does not develop the best physical type of man, and that constant medical supervision is not a luxury, but a necessity. However such statements may be interpreted by those taking various views of the game, it cannot be doubted that they express facts and not surmises. Acknowledging these facts, it remains for the authorities to determine whether the advantages of the game as now played compensate for the situation as outlined by Drs. Nichols and Smith. It is, in any case, futile in the future to say that the injuries are trivial and the danger slight. It is also evidently a mistake to suppose that the older and more experienced players are exempt from injury as compared with the schoolboy contingent. We commend most cordially this exhaustive paper to those interested in a game which deservedly or not has become more popular than any other single outdoor sport.

CHARITABLE BEQUESTS OF A YEAR.

WHATEVER the evils of accumulating great wealth may be, its advantages should not be overlooked. It is reported that \$66,000,000 have been given for worthy charitable purposes during the year just passed, and this amount is behind the record of 1901. Of this amount it is gratifying to note that upwards of \$37,000,000 were given for educational purposes in the broad sense. A detailed report, made by the *Chicago Record-Herald* regarding the disposition of this \$66,000,000, shows that 83 colleges and schools are beneficiaries, of which Leland Stanford University, because of the death of Mrs. Stanford, receives nearly \$5,000,000; Harvard University has been the recipient of \$1,500,000 in addition to \$2,500,000 contributed for a teachers' endowment fund, followed by Yale with about \$100,000 less. After education has thus been provided for, galleries, museums and societies are next on the list, having received something over \$7,000,000. Hospitals, homes and asylums have received upwards of \$5,000,000.

It is interesting to observe the uses to which this large amount of money for charitable purposes has been put. The strong hold which education as a fit object for benefactions has taken on the public mind is amply shown by the foregoing figures. A certain portion of this

\$37,000,000 has been used for the purposes of advancing medical education through endowments of various sorts and through construction of new buildings. It is evidently being more and more recognized that money spent for higher education, whether professional or not, must ultimately conduce to the best interests of the country at large. It is hardly less noteworthy that galleries, museums and similar institutions, which in the broad sense may rightly be regarded as forms of liberal education, come next in the list of benefactions, whereas purely charitable objects, such as hospitals, homes and asylums, are third. Not only are these figures interesting in themselves, but they demonstrate the wisdom with which money is given in this country. The two men who have contributed by far the largest sums to this grand total are Mr. Andrew Carnegie and Mr. John D. Rockefeller, the former having given upwards of \$14,000,000, and the latter more than \$11,500,000.

With these figures before us, and with wealth still increasing, and accumulating in the hands of individuals, it is not to be supposed that any worthy educational scheme will suffer long for lack of funds. Naturally, the demands increase as the possibilities of supply multiply, but it is each year being more and more definitely demonstrated that men of wealth are willing to give liberally if they can be shown the worthiness of the object for which they are called upon to provide.

MEDICAL NOTES.

AMERICAN DERMATOLOGICAL ASSOCIATION OFFICERS.—At the twenty-ninth annual meeting of the American Dermatological Association, held in New York City, Dec. 28, 29 and 30, 1905 the following officers were elected for the ensuing year: President, Dr. M. B. Hartzell of Philadelphia, Pa.; vice-president, Dr. Thomas C. Gilchrist of Baltimore, Md.; secretary and treasurer, Dr. Grover W. Wende of Buffalo, N. Y. The next meeting of the Association will be held in Cleveland, Ohio, in May, 1906.

SOCIETY FOR THE PREVENTION OF PREMATURE BURIAL.—A society has recently been organized having for its object the prevention of premature entombment, burial or cremation. The purposes of this newly constituted society are to secure data regarding the resuscitation of persons apparently dead and prematurely buried and to circulate literature on the general subject. Such organizations tend rather to increase than diminish

a widespread morbid anxiety regarding the question of premature death. It is unfortunate that the public should be further distressed in this matter.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON.—For the week ending at noon, Jan. 3, 1906, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 45, scarlatina 33, typhoid fever 5, measles 54, tuberculosis 25, smallpox 0.

The death-rate of the reported deaths for the week ending Jan. 3, 1906, was 20.42.

BOSTON MORTALITY STATISTICS.—The total number of deaths reported to the Board of Health for the week ending Saturday, Dec. 30, 1905, was 213, against 169 the corresponding week of last year, showing a increase of 44 deaths and making the death-rate for the week 18.67. Of this number 117 were males and 96 were females; 208 were white and 5 colored; 120 were born in the United States, 85 in foreign countries and 8 unknown; 33 were of American parentage, 153 of foreign parentage and 27 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 50 cases and 2 deaths; scarlatina, 16 cases and 2 deaths; typhoid fever, 15 cases and no deaths; measles, 153 cases and 4 deaths; tuberculosis, 31 cases and 23 deaths; smallpox, no cases and no deaths. The deaths from pneumonia were 42, whooping cough 0, heart disease 25, bronchitis 10 and marasmus 1. There were 11 deaths from violent causes. The number of children who died under one year was 15; the number under five years, 65. The number of persons who died over sixty years of age was 47. The deaths in public institutions were 62.

NEW YORK.

REAPPOINTMENT OF DR. DARLINGTON.—The reappointment of Dr. Darlington by Mayor McClellan to the position of Health Commissioner has been received with much satisfaction by the medical profession as it is felt that the wisdom of bestowing this important office upon a competent physician rather than a layman has now been demonstrated, and that the present incumbent has performed the arduous duties of the position in an entirely satisfactory manner.

HOSPITAL SATURDAY AND SUNDAY ASSOCIATION.—Favorable weather on the days of the annual collection of the Hospital Saturday and Sunday Association (Dec. 30 and 31) gave prom-

ise of large contributions in the synagogues and churches. During the past year the institutions belonging to the Association, forty in number, cared for 52,713 bed patients, of whom 33,774 were free cases, and treated 314,838 dispensary patients. The total expenses for this work were \$2,450,517, of which \$1,383,286 was provided for by the income of investments, the returns from pay patients, and the appropriations from the city; leaving a balance of \$1,067,231 to come from the benevolent public.

SETTLEMENT OF A DISPUTED WILL. — A noted will case has just been terminated in the New York Supreme Court, the contest being over the estate valued at more than \$2,000,000, of Wallace C. Andrews, who, with his wife, was burned to death in his residence on 67th Street, near Fifth Avenue, on April 7, 1899. On Dec. 22, Justice Dowling handed down a decision to the effect that, the evidence presented not showing whether Mr. Andrews or his wife died first, the will is upheld. By the terms of the will, Mrs. Andrews, should she survive him, was to have a life interest in his estate. On her death the property was to go to the Andrews Institute for Girls, founded by him, in Ohio. Should she die before him, the estate was to go immediately to that institution. The fight over the Andrews estate was a four-cornered one, the executor, the Andrews Institute, the Smithsonian Institution and the relatives of the decedent being separate parties to the suit. The will has a provision that if the bequest to the Andrews Institute should be for any reason illegal or impossible, the estate should go to the Smithsonian Institution. The executor joined issue with the attorneys for the Andrews Institute, and the heirs with the Smithsonian Institution, although the entire estate would presumably go to the latter, by the terms of the will, if the bequest to the Andrews Institute were declared illegal. In regard to the latter point, the Court held that the will cannot be attached in the State of New York, as the Institute is an Ohio corporation.

REPORT OF THE HEALTH DEPARTMENT. — The condensed report which was made to Mayor McClellan last summer by the Health Department, of the work done by it during the six months ending July 1, 1905, has just been printed and sent out. Among the parts of it which had not previously been made public the following are worthy of note: The work of the Sanitary Police was effective. The number of arrests made was 2,800, as against 1,459 in the first six months of

1903, and 2,110 in the same period in 1904. The number of nuisances abated by personal effort were: 1903, 6,956; 1904, 9,686; 1905, 9,054. The portion of the law relating to the employment of women and children in mercantile establishments which comes under the jurisdiction of the Health Department has been efficiently enforced. Eleven thousand certificates were issued, and 2,600 applications rejected. Thirteen thousand mercantile establishments were inspected, and very few cases of persistent disobedience of the law, requiring drastic action, were found. The work of medical inspection and the subsequent care of nurses, and the physical examination in the public schools, was vigorously prosecuted. The figures show that while in the first six months of 1903 no less than 51,664 children were excluded from school, in the same period of 1905 only 10,585 were excluded, — an enormous educational saving. Many minor diseases which were formerly excluded are now treated in the schools. Dr. Darlington thinks that the present system, which has proved so efficient in the schools in which it has been employed, should be extended to all the schools of the city. This work is, in his opinion, of as great importance as any which has ever been undertaken by the New York Health Department. It is gratifying to note that there was an increase in births and marriages reported, and a decrease in deaths, in every borough. There were 50,943 births reported, in comparison with 47,384 during the first six months of 1904. There were 20,768 marriages, as compared with 19,295 in 1904; and 37,969 deaths, as compared with 42,690 in 1904, reducing the death-rate from 22.24 to 19.23.

--- **Miscellany.**

LECTURES ON PNEUMONIA AND CEREBRO-SPINAL MENINGITIS.

On Dec. 29, Dr. Darlington gave the first of a series of public lectures which has been inaugurated by the New York Academy of Medicine, and it was devoted mainly to the subjects of pneumonia and cerebrospinal meningitis. In the course of it he said, after giving a number of statistics: "A fair conclusion is that the recent apparent increase of pneumonia has been mainly due to the transfer of part of the bronchitis mortality record to the pneumonia record, either as a matter of classification by registrars or of diagnosis by physicians, or both. While the figures do not bear out the belief that pneumonia is on the increase — showing, in fact, just the contrary to be true — we must remember that the general death-rate for all diseases has

decreased by about one fourth. The decrease in pneumonia, therefore, has not kept pace with the general improvement in the health of the inhabitants." He then gave the results of a study of 321 cases of pneumonia in New York, in December, 1901, and January, 1905. Among these there were 56 deaths; 7 in persons under fifteen years old, 31 in the ages between fifteen and fifty, and 18 in persons over fifty. The average mortality rate was 20.5%. Dr. Darlington gave a summary of the results obtained by the Health Department commissions on both pneumonia and meningitis. The conclusions of the latter commission he announced as follows:

(1) The disease has occurred in several large epidemics during the past century; sporadic cases are met with in the periods between these epidemics and constitute the link between them. We do not know the circumstances giving rise to these epidemic outbreaks.

(2) The epidemic form of cerebrospinal meningitis is almost invariably associated with the meningococcus of Weichselbaum, and the sporadic cases are frequently associated with the organism. During the first week of the disease this organism is present in the nasal mucus in fully half the cases; later in the disease it is found in a smaller fraction. It also occurs in the nasal mucus of some persons who are in close contact with cases of the disease. The meningococcus is of low vitality, and is rapidly killed by drying and on exposure to sunlight. This makes infection by dust extremely improbable.

(3) The disease seems distinctly communicable in the sense that the organism is transmitted from the nasal secretion of one person to another. The transmission of the organism, however, is not synonymous with the transmission of the disease. The disease in some epidemics affects mostly infants, in others, older children, and sometimes chiefly adults. The reason for this is not at all clear.

(4) It seems unlikely that infection is frequently due to trauma or the result of over-exertion. Cerebrospinal meningitis in animals seems to have no connection with the disease in men. There is no evidence to show that the disease is carried by vermin or insects.

(5) The susceptibility of the individual is an important factor in the development of the disease.

(6) The period of incubation is short, from one to four days.

(7) There is no evidence of the occurrence of a dwelling infection.

(8) It would seem well to isolate most cases of cerebrospinal meningitis occurring in the crowded tenement districts.

In the report there were, apparently, no recommendations or suggestions as to treatment. In the epidemic in New York last winter and spring Dr. Darlington said that out of 365 cases reported there were 344 deaths—a mortality of 91%. All the cases of the disease were carefully indexed and arranged according to sections and

streets. In a group of 58 instances in which more than one case occurred in a house, representing 141 cases in all, the following results were shown: In 39 instances, 2 cases to a house; in 15 instances, 3 cases to a house; in 2 instances, 4 cases to a house; in 1 instance, 5 cases to a house; in 1 instance, 8 cases to a house. In three of these instances the disease occurred in the families of janitors, appearing to have been communicated to or by them in the ordinary intercourse with the tenants. In two instances the disease appeared to have been contracted in school.

IMMUNIZATION OF COWS AGAINST TUBERCULOSIS.

The Paris correspondent of the *British Medical Journal* writes that: "The experiments which have been conducted during the present year at Melun, in the department of Seine-et-Marne, to render cows immune to tubercle have been successful. On Dec. 3 a certain number of bacteriologists and veterinary surgeons assembled in the stables of the old barracks to verify the results. On Feb. 19 last a certain number of animals—Dutch cows, Limousin bulls and Normandy cattle—all young and healthy, were vaccinated with an emulsion extracted by Behring's method from tubercle bacilli by M. Vallé, Professor at the Veterinary School of Alfort. Towards the middle of June the vaccinated animals were divided into three lots: (1) Seven of these and seven healthy unvaccinated cows of the same race and age were all inoculated under the skin of the shoulder with the tuberculous virus; one month later all the control animals showed vast tuberculous lesions, while all the vaccinated beasts were free, with the exception of one or two which showed insignificant traces of the infection. (2) Six vaccinated and six unvaccinated animals had virulent cultures injected into the jugular vein, with a much more marked difference in the results obtained. The six vaccinated animals remained in good health, while all the control animals were gravely affected, three dying in a fortnight. (3) Vaccinated cows were placed alongside tuberculous animals in the same cowshed. The vaccinated animals have resisted, while the control animals on post-mortem examination showed generalized tubercle. MM. Vallé and Moussu, professors at Alfort, intend keeping these animals to prolong the experiment and see how long this immunity will last. M. Vallé gave a lecture explaining the results of the experiments to the assembled company. Immunity has been proved but its duration is as yet unknown. If the vaccination will protect the animal for eighteen months or two years, then the problem may be considered as solved, which will only require a law making vaccination compulsory to protect cattle from infection. M. Roux, of the Pasteur Institute, is to make an examination of the tuberculous lesion in the animals which served as controls to check the experiments."

RECORD OF MORTALITY FOR THE WEEK ENDING SATURDAY, DEC. 16, 1905.

| CITIES. | Population. Census, 1900. | Reported deaths in each. | Percentage of deaths from | | | | |
|------------------|------------------------------|-----------------------------|-----------------------------|-------------------------|-------------------------|--------------------------|-------------------|
| | | | Deaths under five years. | Infectious diseases. | Acute lung diseases. | Diphtheria and croup. | Typhoid fever. |
| New York . . . | 1,289 | 351 | 19.62 | 20.48 | 2.32 | 1.32 | 1.70 |
| Chicago . . . | 459 | 133 | 26.86 | 16.06 | 2.24 | .82 | 3.07 |
| Philadelphia . . | 590 | 130 | 20.23 | 19.64 | 2.55 | 1.06 | 3.34 |
| St. Louis . . . | — | — | — | — | — | — | — |
| Baltimore . . . | 105 | 43 | 18.97 | 17.43 | .51 | 1.53 | 2.56 |
| Cleveland . . . | — | — | — | — | — | — | — |
| Buffalo . . . | — | — | — | — | — | — | — |
| Pittsburg . . . | — | — | — | — | — | — | — |
| Cincinnati . . . | — | — | — | — | — | — | — |
| Milwaukee . . . | — | — | — | — | — | — | — |
| Washington . . | — | — | — | — | — | — | — |
| Providence . . . | — | 11 | 13.46 | 17.31 | 3.85 | 1.92 | 1.92 |
| Boston . . . | 505,380 | 185 | 70 | 14.59 | 25.40 | 1.08 | 1.08 |
| Worcester . . . | 128,135 | 29 | 12 | 13.79 | 10.34 | — | 3.45 |
| Fall River . . . | 105,762 | 38 | 17 | 23.68 | 21.05 | 2.63 | 5.26 |
| Cambridge . . . | 97,434 | 15 | 6 | 6.67 | 20.00 | 6.67 | — |
| Lowell . . . | 33,881 | 37 | 10 | 13.31 | 24.32 | 2.70 | 2.70 |
| Lynn . . . | 77,042 | 28 | 8 | 3.57 | 7.14 | — | 3.57 |
| New Bedford . . | 74,302 | 29 | 9 | 36.00 | — | 31.03 | 3.45 |
| Springfield . . | 73,540 | 19 | 2 | 10.33 | 21.05 | — | 4.17 |
| Haverhill . . . | 33,050 | 24 | 2 | 23.17 | — | — | — |
| Somerville . . . | 69,272 | 19 | 2 | 10.53 | 21.05 | — | 5.26 |
| Holyoke . . . | 49,034 | 14 | 3 | 7.14 | 35.71 | 7.14 | — |
| Brookline . . . | 47,794 | 10 | 2 | 30.00 | — | — | — |
| Malden . . . | 38,037 | 12 | 4 | 16.67 | 8.33 | — | — |
| Haverhill . . . | 37,439 | 14 | 2 | 28.57 | 14.29 | — | 14.29 |
| Salem . . . | 37,027 | 14 | 3 | 28.57 | 14.29 | — | 7.14 |
| Chelsea . . . | 37,280 | 14 | 5 | 21.43 | 7.14 | — | — |
| Newton . . . | 36,827 | 7 | 4 | 14.29 | 28.57 | — | — |
| Fitchburg . . . | 33,021 | 8 | 2 | 18.18 | 18.18 | — | 9.09 |
| Taunton . . . | 30,967 | 11 | 2 | 18.18 | 18.18 | — | 14.29 |
| Everett . . . | 29,111 | 7 | 4 | 28.57 | — | — | — |
| Quincy . . . | 28,076 | 8 | 3 | 25.00 | 25.00 | — | 10.00 |
| Waltham . . . | 26,292 | 10 | 1 | 20.00 | 10.00 | — | — |
| Glocester . . . | 26,001 | 7 | — | — | — | — | 14.29 |
| Pittsfield . . . | 25,001 | 7 | — | 14.29 | — | — | — |
| Brookline . . . | 23,436 | 6 | — | 16.67 | — | — | — |
| North Adams . . | 22,150 | 4 | 0 | — | 25.00 | — | — |
| Chicopee . . . | 20,191 | 7 | 1 | — | 42.86 | — | — |
| Northampton . . | 19,847 | 8 | 0 | 25.00 | — | — | — |
| Melrose . . . | 19,686 | 2 | — | 50.00 | — | — | — |
| Beverly . . . | 15,223 | 3 | — | 33.33 | — | — | — |
| Newburyport . . | 14,075 | 5 | 0 | 20.00 | — | — | — |
| Hyde Park . . . | 14,510 | 3 | 1 | 33.33 | — | 33.33 | — |
| Woburn . . . | 14,402 | 6 | 3 | — | 66.67 | — | — |
| Leominster . . . | 14,267 | 1 | 0 | — | — | — | — |
| Melrose . . . | 14,295 | 1 | 0 | — | — | — | — |
| Marlboro . . . | 14,073 | 4 | 0 | — | 32.33 | — | — |
| Westfield . . . | 13,410 | 3 | 0 | — | — | — | — |
| Clinton . . . | 13,105 | 3 | 1 | 33.33 | — | — | — |
| Peabody . . . | 13,098 | 3 | — | — | — | — | — |
| Attleboro . . . | 12,702 | 5 | — | — | 20.00 | — | — |
| Revere . . . | 12,653 | 5 | — | — | — | — | — |
| Attleboro . . . | 12,488 | 3 | 1 | 50.00 | — | — | — |
| Milford . . . | 12,105 | 2 | — | — | — | — | — |
| Gardner . . . | 12,012 | 2 | — | — | — | — | — |
| Weymouth . . . | 11,585 | 1 | 0 | — | — | — | — |
| Franklin . . . | 11,518 | 1 | — | — | — | — | — |
| Watertown . . . | 11,258 | 1 | — | — | — | — | — |
| Plymouth . . . | 11,119 | 1 | — | — | — | — | — |
| Southbridge . . | 11,000 | 2 | — | 50.00 | — | — | — |
| Wakfield . . . | 10,268 | 1 | — | — | — | — | — |
| Webster . . . | 10,048 | 1 | — | — | — | — | — |

Deaths reported, 3,149; under five years of age, 853; principal infectious diseases (smallpox, measles, cerebrospinal meningitis, diphtheria and croup, diarrheal diseases, whooping cough, erysipelas, fevers and consumption), 622; acute lung diseases 605, consumption 329, scarlet fever 14, whooping cough 5, cerebrospinal meningitis 21, smallpox 0, erysipelas 8, puerperal fever 11, measles 31, typhoid fever 45, diarrheal diseases 67, diphtheria and croup 75.

From whooping cough, New York 2, Baltimore 1, Fall River 1, Brockton 1. From scarlet fever, New York 4, Chicago 1, Philadelphia 3, Baltimore 2, New Bedford 3, Brookline 1. From cerebrospinal meningitis, New York 17, Philadelphia 1, Providence 1, Boston 1, Worcester 1. From erysipelas, New York 5, Chicago 5, Philadelphia 1. From typhoid fever, New York 17, Chicago 4, Philadelphia 10, Baltimore 3, Providence 1, Boston 2, Worcester, Lynn, Lawrence, New Bedford, Somerville, Salem, Waltham and Pittsfield 1 each. From measles, New York 5, Chicago 5, Philadelphia 5, Baltimore 1, Boston 3, Lowell 1, New Bedford 11. From diphtheria and croup, New York 20, Chicago 11, Philadelphia 13, Baltimore 1, Providence 2, Boston 2, Quincy 2, New Bedford 9, Fall River, Lowell, Cambridge, Holyoke, Haverhill, Taunton, Everett and Hyde Park 1 each.

In the seventy-six great towns of England and Wales, with

an estimated population of 15,609,377, for the week ending Dec. 9, 1905, the death-rate was 16.1. Acute diseases of the respiratory organs (London) 192, whooping cough 80, diphtheria 52, measles 110, smallpox 0, scarlet fever 55.

The death-rate ranged from 7.0 in Hastings to 25.8 in Bootle; London 16.3, West Ham 11.3, Brighton 10.2, Southampton 20.4, Plymouth 18.4, Bristol 14.7, Birmingham 18.2, Leicester 12.6, Nottingham 16.0, Birkenhead 18.0, Liverpool 23.6, Wigan 10.8, Bolton 14.3, Manchester 15.5, Salford 13.5, Halifax 12.0, Bradford 17.8, Leeds 18.7, Hull 11.5, Sheffield 14.7, Newcastle-on-Tyne 17.5, Cardiff 16.2, Rhondda 16.3, Merthyr Tydfil 14.8, Kings Norton 9.0, Rochdale 16.9.

METEOROLOGICAL RECORD.

For the week ending Dec. 16, in Boston, according to observations furnished by Sergeant J. W. Smith of the United States Signal Corps:

| DATE | Barometer. | | Thermometer. | | Relative humidity. | | Direction of wind. | | Velocity of wind. | | We'th'r | | Rainfall in inches. |
|-------------|-------------|------------|--------------|--------------|--------------------|--------------------|--------------------|---------|-------------------|----------|-----------|-----------|---------------------|
| | Daily mean. | Barometer. | Daily mean. | Thermometer. | Relative humidity. | Direction of wind. | Velocity of wind. | We'th'r | | | | | |
| | | | | | | | | | Maximum. | Minimum. | 8.00 A.M. | 8.00 P.M. | |
| S. 10 29.48 | 28 | 37 | 18 | 94 | 53 | 73 | N | NW | 20 | 30 | S. | O. | .83 |
| M. 11 29.72 | 24 | 32 | 15 | 87 | 84 | 89 | N | NW | 7 | 3 | O. | O. | .T |
| T. 12 29.92 | 24 | 28 | 20 | 91 | 33 | 92 | N | NW | 6 | 8 | O. | O. | .T |
| W. 13 30.02 | 32 | 44 | 20 | 91 | 60 | 70 | N | NW | 10 | 9 | O. | O. | .0 |
| T. 14 30.57 | 24 | 36 | 13 | 60 | 52 | 56 | W | W | 10 | 16 | F. | O. | .0 |
| F. 15 30.53 | 16 | 38 | 8 | 57 | 64 | 76 | N | N | 12 | 17 | F. | O. | .T |
| S. 16 30.34 | 26 | 32 | 20 | 71 | 75 | 73 | N | N | 15 | 9 | O. | O. | .T |
| ## 30.05 | 33 | 16 | | | 75 | | | | | | | | .83 |

*O, cloudy; C, clear; F, fair; G, fog; H, hazy; S, smoky; R, rain; T, threatening; X, snow; N, below zero. † Indicates trace of rainfall. ## Means for the week.

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING DECEMBER 30, 1905.

R. K. McCLANAHAN, assistant surgeon. Having been examined by a retiring board and found incapacitated for active service on account of disability not the result of any incident of the service, is retired from active service on full pay from Dec. 19, 1905, under the provisions of Section 1434, Revised Statutes.

B. H. DORSEY, assistant surgeon. Ordered to Altoona, Pa., Jan. 2, for duty with recruiting party No. 4.

H. W. JUD, acting assistant surgeon. Detached from duty with naval recruiting party No. 4, ordered home and granted leave until expiration of appointment as acting assistant surgeon.

E. E. CURTIS, acting assistant surgeon. Appointed acting assistant surgeon from Dec. 21, 1905.

RECENT DEATHS.

GEORGE WASHINGTON DOANE, M.D., M.M.S.S., died in Hyannis, Dec. 28, 1905, aged eighty-one years.

JAMES LANG HARRIMAN, M.D., M.M.S.S., died in Hudson, Dec. 28, 1905.

JAMES WILLIAM HOLLAND, M.D., M.M.S.S., died in Westfield, Dec. 29, 1905. Dr. Holland was an associate medical examiner for the Western District of Hampden County. He was also a member of the Board of Health and of the local hospital staff. Dr. Holland served two years in the Philippines as an army surgeon.

DR. WILLIAM MAXWELL WHITE of Amsterdam, N. Y., who was a son of the late Dr. Joseph M. White, died from pneumonia on Dec. 29, in the fiftieth year of his age. He was graduated from Union College, Schenectady, in 1881, and from the Albany Medical College in 1885.

BOOKS AND PAMPHLETS RECEIVED.

An Inspection of the Eastern Pennsylvania State Penitentiary with Reference to Tuberculosis. By Guy Hinsdale, A.M., M.D. Reprint.

Department of the Interior. Bureau of Government, Biological Laboratory. The Clinical and Pathological Significance of Balandium Coll. By Richard P. Strong, M.D. Manila, 1904.

Myasthenia Gravis. By Charles K. Mills, M.D. Reprint.

Original Articles.

ANALYSIS OF ONE HUNDRED AND TWENTY CASES OF MALARIA OCCURRING AT CAMP GREGG, PHILIPPINE ISLANDS.*

BY WERTON F. CHAMBERLAIN, A.B., M.D.,
Captain and Assistant Surgeon, United States Army.

DURING the calendar year of 1901 malarial fever was by far the most common disease among the soldiers and civilians at Camp Gregg, Bayambang, Pangasinan, Luzon, P. I. A considerable number of cases, especially among the officers and civilians, have been treated at home, without being made of record. The number of admissions to hospital for paludal disease during the year, contrasted with that for 1903, is shown below:

TABLE I.

RECORD OF MALARIA IN CAMP GREGG FOR THE CALENDAR YEAR OF 1901.

| Month. | Benign Tertian. | Quar. tan. | Fatigue Autumnal. | Total | Strength Command | Per-centage |
|--------|-----------------|------------|-------------------|-------|------------------|-------------|
| Jan. | 1 | | 1 | 2 | 267 | 7.5 |
| Feb. | 3 | | 1 | 4 | 212 | 1.88 |
| March | 4 | | 2 | 6 | 225 | 2.66 |
| April | 4 | 1 | 1 | 6 | 281 | 2.13 |
| May | 1 | | | 1 | 262 | .38 |
| June | 2 | | | 2 | 266 | .75 |
| July | 5 | | 1 | 6 | 271 | 2.19 |
| Aug. | 10 | | 10 | 20 | 271 | 7.29 |
| Sept. | 18 | 2 | 3 | 23 | 277 | 8.30 |
| Oct. | 13 | | 20 | 33 | 281 | 11.62 |
| Nov. | 16 | 1 | 24 | 41 | 280 | 14.18 |
| Dec. | 6 | | 12 | 18 | 213 | 7.40 |
| Totals | 83 | 4 | 75 | 162 | 2678 | 59.53 |

TABLE II.

RECORD OF MALARIA IN CAMP GREGG FOR THE CALENDAR YEAR OF 1903.

| Month. | Cases Malaria | Mean Strength Command | Percentage |
|--------|---------------|-----------------------|------------|
| Jan. | 27 | 289 | 9.3 |
| Feb. | 21 | 315 | 6.6 |
| March | 8 | 397 | 2.6 |
| April | 12 | 294 | 4.0 |
| May | 9 | 286 | 3.4 |
| June | 11 | 335 | 3.2 |
| July | 16 | 474 | 3.3 |
| Aug. | 13 | 506 | 2.5 |
| Sept. | 14 | 319 | 4.3 |
| Oct. | 8 | 329 | 2.4 |
| Nov. | 3 | 310 | 0.96 |
| Dec. | 6 | 281 | 2.1 |

All but 3 of the 162 cases in 1901 were United States soldiers.

ETIOLOGY.

Location.—The inhabited buildings at Camp Gregg are placed on a site ranging from 60 to 80 feet above the level of the plain which extends for over 100 miles south, and at a distance of about 20 miles from the mountains on the east and west and an equal distance from the sea on the north. Elevation above the sea level not known, but is probably about three hundred feet. The distance from the post to the first houses in the town of Bayambang is about one eighth of a mile. There

are no swamps near, but in one direction rice fields approach to within one-eighth mile of the barracks and hospital. There has been a great amount of febrile disease among the natives in Bayambang.

Drainage. The natural surface drainage of the post is good, and comparatively few puddles suitable for breeding places for anopheles mosquitoes are found on the cleared portion of the reservation, even during the rainy season. The soil is for the most part loam underlaid by clay. The arrangement of the buildings is very straggling, and the reservation is large and covered with a dense and high jungle which at times has grown up to within twenty-five yards of inhabited buildings, and has rarely been kept cut to as great a distance as 100 yards from the barracks, hospital and officers' quarters. Within this jungle it was impossible to find and treat pools, and this accounts for the large numbers of mosquitoes present after the onset of the rains.

There has been no extensive upturning of the soil during the period covered by this report, and that which has occurred has for the most part been at a distance from the barracks.

Climate.—The hottest season at this station is in April, May and June, but the heat even then is not excessive for the Philippines, and the nights for the most part are comfortable, growing very cool in October and November. The rains this year began early in April, occurring almost daily by the middle of May, and showers continued to occur frequently till the end of November. The rainy season has been a light and intermittent one, just the kind which would keep pools constantly filled, yet not severe enough to thoroughly flush out all. This probably accounts for the large amount of malaria this year, as contrasted with last season, when the rainy weather began in July and was more severe and continuous during the summer and fall, thereby being less favorable to the breeding of mosquitoes.

Habitations. All barracks and quarters here are one story high, the floors being only a few feet from the ground. The doors and windows are not screened. The use of mosquito nets at night is compulsory, but many of the nets are inefficient because of insufficient length or coarseness of mesh, this being notably so in the case of the nets issued to this post by the medical department, these having a mesh of about one hundred to the square inch. Through these nets mosquitoes easily pass. As an example of how inefficient bed nets may be, either through carelessness in use or too coarse mesh it may be mentioned that during the height of the mosquito season the nets of the patients in the hospital always contained more or less mosquitoes in the morning, and on one occasion forty mosquitoes were caught in a single net, all being engorged with blood and nearly all bearing anopheles.

The sanitary condition of the inhabited buildings is good, except for the presence of the floor brush and absence of door and window screens.

Length of command. This command, one battalion of the 20th United States Infantry,

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arrived in the Philippines on Dec. 27, 1903, and at this post Dec. 31, 1903. A very few men transferred to the battalion from the troops it displaced, but the bulk of the garrison has consisted of men who had never been in the tropics, or else of those who had been in the United States for the preceding eighteen months. From time to time recruits arrived from the United States.

Water supply. — All water for drinking, cooking and bathing purposes is distilled from river water.

Race and age. — All of the cases here studied are American whites, and for the most part young men — between twenty and thirty years old.

Practice marches. — Shortly after the termination of a practice march by Company K, taking place Feb. 13 to 22, 1904, there was a marked increase in febrile diseases. No mosquito nets were used on this march. From this company there were admitted to hospital on Feb. 28, 3 cases of malaria; Feb. 29, 1 case; March 1, 2 cases of dengue and one of isolation; March 3, 3 cases of dengue; March 2, 2 cases of dengue; March 4, 1 case of dengue and 1 of malaria; March 5, 1 of dengue; March 6, 1 of dengue. Thus in thirteen days following the return of the company there were 16 admissions for febrile conditions diagnosed on the register as above. I did not see these cases, but judging from a conversation with the surgeon who attended them, and from a study of the charts, histories and treatment (all were given quinine), it appears to me probable that the cases diagnosed as dengue and insulation were in reality malarial fevers. Nearly all these men subsequently developed malarial fevers which were probably relapses from an original infection on this march.

On the succeeding three practice marches mosquito nets were used and febrile diseases did not develop as a result of the marches. Except for a ten-day practice march for each company the command this year has done garrison duty, with no hardships, overwork or notable exposure.

Mosquitoes. — In April mosquitoes at this post were very rare. An increase began in May, and the insects were very numerous during June, July and August, beginning to decrease in the latter part of September. They were present in considerable numbers in October and November and became scarce in December. During the period from May 15 to December 31 about 1,500 mosquitoes were collected and sent to the Army Medical Museum for examination. In the collection up to July 15, mosquitoes of genus *Culex* predominated (21 to 5). In all subsequent collections anopheles were in the majority. In August one shipment contained 219 of the genus *Anopheles* and 32 of *Culex*. All these collections were made either at night (8 to 10 P.M.) or about 6.30 A.M. on the inner side of screens in a screened house.

Day-flying mosquitoes have been very rarely seen during the year, and none have been collected. The usual day-flying mosquito in the

Philippine Islands is reported to be *Stegomyia fasciata* and no specimen of this insect has been found in my collections.

In the collections reported on by Miss Ludlow, of the Army Medical Museum, the following have been found: *Culex microannulatus*, Theob. C. gelidus, Theob.; *Culex annulifera*, Ludlow; *Culex concolor*, Desv.; *Culex fatigans*; *Mimomyia chamberlaini*, n. sp. Ludlow; *Mansoni annulifera*, Theob.; *Myzomyia (anopheles) ludlowi*, Theob.; *Myzomyia (anopheles) thomtonii*, Ludlow; *Myzomyia (anopheles) rossii*, Giles, var. *indefinata*, n. v. Ludlow; *Nyzzorhynchus (anopheles) thilip*, Ludlow; *N. (anopheles) fuliginosus*, Giles; *Myzorrhynchus (anopheles) barbirostris*, Van der Wulf; and *Stegomyia scutellaris*, Walker.

INCUBATION.

The only facts bearing on this point are those relating to the practice march above mentioned. It appears probable that the febrile cases admitted were infected during the march, which was of ten days' duration. Of these cases 12 came in within ten days after the return of the company. This is consistent with the incubation period of nine to ten days mentioned by Craig, but as the presence of the plasmodia was demonstrated only in four cases the remainder of the diagnoses are not certain, neither can infection prior to departure or subsequent to return be excluded.

IMMUNITY.

Nothing has been observed pointing to immunity of any. The percentage of cases among the commissioned officers and their families has been less than among the enlisted men, but this is believed to be due to greater care in the use of mosquito nets, to the fact that they do not spend their evenings in town among the natives and also to some extent to the use of quinine as a prophylactic.

Of the 120 analyzed cases of malaria 24 are recurrences in the same individual. Of these 24 cases at least 4 were proved to be new infections by finding a type of plasmodia different from that demonstrated on the first entry. All these new infections and also six of the recurrences (probable relapses) occurred while the patients were on a compulsory course of treatment consisting of .5 gm. quinine sulphate in solution three times a week. This treatment had been in effect several weeks in each case when fever occurred. On Dec. 11, the compulsory course was increased to .5 gm. four times a week, and since then there has been one relapse and one new infection among the men taking this treatment. These cases prove that neither 1.5 gm. nor 2 gm. quinine sulphate in solution a week is sufficient in all cases to prevent relapse or new infection.

CLASSIFICATION.

The number of cases and the classes of malarial fever occurring during the period from Jan. 1 to Dec. 31, 1904, are shown in Table I, tabulated according to months.

There came under my personal observation

and care, subsequent to April 13, 1904, 120 cases which were sufficiently complete in history, chart and blood findings to make them of value for analysis and on these the following remarks are based. Three hourly charts were kept in all these cases from 6 A.M. to 9 P.M. These 120 cases are classified as follows: Quartan intermittents, 3; benign tertians, 55, of which 28 were single infection intermittents, 23 were double infection intermittents (quotidian) and four were remittent or continued; malignant infections (estivo-autumnal), 62 cases, of which 24 were tertian intermittents, 16 were quotidian intermittents and 22 were remittents. In these 120 cases plasmodia were found in 113, the failure to find the plasmodia in 7 being due to a lack of cover glasses during a portion of August. All those in which plasmodia were not found were typical benign tertian fevers.

There was in the series one pernicious case, and no other presenting any alarming symptoms further than rises in temperature to 106.5° F. No cases of malarial cachexia developed. The case of pernicious fever developed in a civilian engineer living and working at the distilling plant one-half mile from the post. He had neglected treatment for first attack.

QUARTAN INTERMITTENTS.

Only three of these infections were observed, two being in September and one in November. Typical parasites were found in all. Severe chill was noted in one, slight chill in one and no chill in the third. All cases complained of headache and pain in back and limbs, and one was nauseated at time of paroxysm. The temperature during paroxysm reached between 104° and 105° F. in one case and was below 104° F. in the other two. No paroxysm occurred after beginning quinine treatment.

BENIGN TERTIAN INFECTION.

Of the benign tertian cases the double infections increased markedly as the season advanced. The plasmodia were demonstrated in 18 of the 55 cases diagnosed as benign tertian fever, and in many of the cases of double infection the two crops of parasites were easily demonstrated in the blood. In several cases nearly all stages of the parasite could be found on the slide, yet the fever was a typical intermittent tertian and not quotidian or remittent as had been predicted from the blood examination. The appearance of the organisms agreed entirely with the usual description in the textbooks.

In one of the benign tertian cases a round flagellated plasmodium was seen, the pigment in the main body of the organism being very sluggishly motile and the flagellum having a rounded pigmented knob at its proximal end in contact with the periphery of the main body and no clubbing at its distal extremity. The flagellum was very active. In about ninety seconds the knob of the flagellum fused with the main body of the parasite, the pigment in the organism

became exceedingly active and the flagellum faded away. It is thought that this was a so-called passive flagellated form (Craig), the main body being a macrogamete and the flagellum being an escaped one (microgamete) which fused with and fertilized the macrogamete. From the literature available here it appears that this process has very rarely been observed in the blood specimen.

The three-hour temperature charts in four of the benign tertian infections showed a remittent temperature extending over a period of several days. Three of these occurred in September and a fourth in November. Typical tertian plasmodia were found in all. Three of the cases were characterized by slight chills and the fourth by merely chilliness. The highest temperature rise was between 104° and 105° F. in 3 cases.

Of the benign tertian intermittents (single infections) one occurred in April, one in May, one in June, two in July, seven in August, six in September, three in October, five in November and two in December. Of the double benign tertian infections (quotidian intermittents) two occurred in July, one in August, four in September, five in October and nine in November and two in December.

Taken together the benign tertian infections exhibited the following points of clinical interest: Severe chills at the time of the paroxysm were noted in 28 patients, slight chills in 12, merely chilliness in 5 and no chill or chilliness in 10. Nausea has been a frequent and distressing symptom in all varieties of malarial fever in this series, and in the 55 benign tertian cases it occurred in 29 and vomiting in 17. This gastric disturbance was usually present only during the period of the paroxysm. Diarrhea was noted in one case. Abdominal pain of greater or less degree was complained of in 7 cases. It was usually accompanied by tenderness, and in one case simulated appendicitis. Cough was present in 9 cases and pain in the chest in 1. Headache was a prominent symptom during the febrile period in 34, and bone, muscle or joint pain, more or less generalized, in 24 cases. Herpes was noted on the lips in 4 cases.

The temperature at its highest point (as recorded every three hours) was between 104° and 105° F. in 19, between 105° and 106° in 2 and between 106° and 107° in 2. A pseudocrisis and precrisis rise in one or more of the paroxysms was observed in 5 cases, of which 4 were double infections (quotidian) and one single. This resembled the pseudocrisis and precrisis rise described by Craig and others in malignant tertian intermittents, except that in not all of the cases was the precrisis rise higher than the maximum before the pseudocrisis. No marked drops below normal following paroxysms are shown on the charts. In all of the cases shown, the pseudocrisis the diagnosis was confirmed by finding unmistakable benign tertian plasmodia.

In 16 cases one paroxysm occurred after beginning quinine treatment 1.5 gm. 4 times a day in solution) and in 4 cases 2 occurred. In 2 cases

paroxysms and all fever ceased spontaneously, or as a result of rest in bed and cathartics, before quinine was administered.

MALIGNANT (ESTIVO-AUTUMNAL) INFECTIONS.

The prevalence of the estivo-autumnal infections by months is shown in table in Charts 1 and 2.

Parasites.—In the 62 cases of the estivo-autumnal infections here studied the plasmodia were found in all. While clinically the estivo-autumnal intermittent fevers could be clearly divided by the three-hourly chart into tertian intermittents and quotidian intermittents (as described by Manson, Craig and others), we could not detect the constant differences described by these writers as characteristic of the plasmodia in these two clinical types, and we are inclined to agree with Thayer that the differences between the two varieties of organism described are so slight that they are probably due to variations in the length of the cycle of development. The large pigmented form, one-half size of corpuscle (which seems to be the most characteristic and easily recognized distinctive feature as given by Craig), was seen in only 1 case in this series. With this one exception the largest pigmented forms seen filled from $\frac{1}{2}$ to $\frac{3}{4}$ of the corpuscle, and these were found in 7 out of 24 tertian intermittents, and in 1 out of 16 quotidians. Pigmented forms $\frac{1}{2}$ the size of the corpuscle, or smaller, were found in 6 of the tertians and 1 of the quotidians. No differences in the ameboid bodies and ring forms could be detected in the two clinical types.

In making these remarks it is recognized that the significance of such a small series of cases is not great, and also that the examinations of the bloods in many cases were not frequently repeated because of the necessity of curing the patients and returning them to duty within a reasonable time.

Crescents were found only twice, due to the fact that the patients were received promptly on appearance of first symptoms and were treated with quinine before the usual time necessary for development of crescents had elapsed.

No important changes in the size, shape or color of plasmodium containing blood corpuscles in the estivo-autumnal cases were observed. In the benign tertian cases the infected blood corpuscles were always enlarged and pale when pigmented forms were found.

Malignant (estivo-autumnal) tertian fevers.—There were 24 cases so classified on clinical grounds. The three-hour temperature chart showed a pseudocrisis and precritical rise of temperature in one or more paroxysms in 11 out of the 24 cases. In most of the malignant tertian infections the febrile stage was of long duration, frequently eighteen hours and sometimes twenty-four. In a few, however, there was a sharp rise and an equally rapid fall, the febrile reaction lasting about nine hours without pseudo-crisis, and the chart resembling that of a benign tertian fever. In six cases the maximum rise was between 104° and 105° F.; in 9 cases between 105°

and 106° , and in 3 between 106° and 107° . In 10 cases one paroxysm and in 3 cases 2 paroxysms were observed after beginning treatment with quinine. Severe chills occurred in 9 cases, slight chills in 4, chilliness in 2 and no chill or chilliness in 9.

Malignant (estivo-autumnal) quotidian fevers.—There were 16 cases of this type. The three-hour curve showed a pseudocrisis and precritical rise in 3 cases. In 7 cases the maximum rise was between 104° and 105° F., in 1 from 105° to 106° and in 2 above 106° . Severe chills were noted in 6, slight chills in 6, chilliness in 1 and no chill or chilliness in 3. Three had 1 and four 2 paroxysms after beginning quinine.

Malignant (estivo-autumnal) remittent or continued fevers.—Twenty-two of these were observed, 2 having tertian paroxysms, 13 quotidian and 7 showing no characteristic periodicity in febrile reaction. These cases varied from marked remittents to continued fevers with very slight daily remissions. None continued over a week. Estivo-autumnal plasmodia were demonstrated in all.

The temperature curve reached a point between 104° and 105° F. in 10, between 105° and 106° in 4 and above 106° in 3. Severe chills occurred in 6 cases, slight chills in 6, chilliness in 5 and no chill or chilliness in 5. After beginning quinine, fever continued for one day in 5 cases, for two days in 3 and for three days in 6.

Considered together the estivo-autumnal infections showed the following points of clinical interest:

Nausea and vomiting was marked and annoying symptom. Out of the 62 cases nausea occurred in 38, and vomiting in 23. These symptoms in most cases were confined to the period of marked febrile reaction. Diarrhea was noted in 7 cases. Abdominal pain, in most cases associated with tenderness on palpation, was recorded in 18 cases. Forty-seven patients complained of headache, and 41 of more or less generalized pain in back and limbs. Cough was present in 11 cases, and herpes on the lips in 3. Urticaria occurring at the time of paroxysms and ephemeral was noted in 2 cases.

No case with infection by two types of plasmodia was detected and no cases resisting quinine and resembling typhoid were observed. During the period between Jan. 1 and Dec. 31, there were 11 diagnoses of dengue and 7 of fever of undetermined causation. All but 1 of the cases diagnosed as dengue occurred in March after the practice march referred to above. One case of pernicious malaria of gastralgie and cardialgie type was observed and a history is appended.

In all cases of malaria the urine was examined. Albuminuria was not noted in any case.

PROPHYLAXIS.

All practicable means were employed to grade and clear the site of the military post, and pools on the cleared part of the reservation were oiled three or four times a month. No larvæ were at any time found growing in pools on the post,

though often looked for. The use of mosquito nets at night was compulsory. Each case of malaria after being discharged from the hospital received a compulsory course of quinine, lasting for a period of ten weeks. This was administered regularly at the hospital under supervision of a sergeant, so could not be neglected. That 2 gm. quinine sulphate, in solution, weekly, is not in all cases prophylactic against infection or relapse is shown above.

TREATMENT.

Rest in bed, liquid diet and in most cases a cathartic, usually calomel followed by magnesium sulphate, was a routine treatment. When quinine was administered it was given in doses of .5 gm. in solution 4 times daily during the stay in hospital, unless this was unduly prolonged by some pathological condition other than the malaria. On leaving the hospital each patient was required to take the following course of quinine sulphate treatment: For two weeks .5 gm. twice daily, at the end of which .5 gm. three times weekly was given for two months. At the end of two months .5 gm. daily was given for a week.

Quinine was given in solution, except when it caused nausea and vomiting, in which case capsules or tablets were substituted. The action of quinine has been found efficient and prompt in all cases. Arsenic was given in addition to quinine in a few of the recurrent cases.

In this series of malarial cases the blood examinations were made by Lieut. S. J. Morris, Assistant Surgeon, and by myself, and in nearly all cases each form of the parasite was examined by both.

CASE IX. Pernicious estivo-autumnal malarial fever.—Late in the afternoon of Nov. 26, 1904, a case of pernicious malarial fever was admitted, the history of which is as follows:

Engineer, running distilling plant located at edge of river in Bayambang, P. I., one-half mile from Camp Gregg. Age twenty-nine. Born in California. Family history unimportant. Lives in house adjacent to distilling plant. Uses alcohol to excess.

Previous history.—Has been in Philippine Islands continuously six years and at Bayambang for twenty-eight months. Has never slept under a mosquito net. Had malaria in United States eight years ago. Smallpox two years ago. Oct. 15, 1904, had chills and fever and took quinine for two or three days. Chills and fever recurred about Oct. 25 and took quinine in tablet form at irregular intervals up to Nov. 20.

Present illness.—Nov. 24, slight chill in forenoon and fever in afternoon with headache and general pains. No nausea. Bowels regular.

Nov. 25, slight chill about 10 a.m. and slight fever in afternoon. Vomited dinner about 1 p.m. Headache. No general pain. No diarrhea. Took 1.2 gm. quinine to-day in tablet form.

Nov. 26, felt fairly well in forenoon and worked till 2 p.m. Bowels moved once in morning. About 11 a.m. fever, general pain and headache came on. Vomited dinner at 12.30 and emesis continued all the afternoon. At about 4 p.m. blood appeared in the ejected material. About 3 p.m. abdominal pain began to come on and quickly became excruciating. At the same time diarrhea began. About 6 watery stools in first half

hour after which stools continued frequent but less often. A hard chill came on about the time of the abdominal pain.

At 4 p.m. patient was seen by Lieutenant Morris, Assistant Surgeon. The chill was just passing off. Vomiting was continuous, the vomitus being first yellow and then blood stained. Had two large watery stools within a few minutes consisting of bile stained fluid containing flakes of mucus. Not "rice watery" in appearance. Skin felt hot. Pulse 100, strong and full. Advised to enter hospital at once.

After this patient worked for one-half hour about the distilling plant and came to hospital in a carriage, arriving about 5 p.m.

When first seen by the writer, about 5.25 p.m., patient was in a state of extreme collapse. Examination showed a well-developed and poorly-nourished man. Face drawn and pinched, bearing the stamp of impending death. A marked cadaveric odor. Eyes sunken, eyeballs very brilliant and in constant motion. Patient very restless, groaning and crying out, complaining of severe epigastric pain and throwing himself about in the bed. Also complained of pain over apex of heart. Moderate perspiration. Trunk warm (not hot), legs cool, hands and arms extremely cold and clammy. Respiration shallow and hurried. Tongue dry and glazed. Abdomen slightly retracted, almost entirely flat on percussion and an area just below tip of sternum about the size of a dollar which was extremely tender. No other tenderness.

Pulse scarcely perceptible at wrist and could not be counted. Heart's action feeble but regular and 158 beats to the minute. Nothing abnormal heard in lungs. Temperature by mouth at 5.10 p.m. and 6.30 p.m., 98.6. Temperature by rectum at 6.30 p.m., 106.8.

There was no hicough. Voice was husky. Intense thirst was complained of and when seen much ice water was being drunk and soon rejected. Vomitus slightly pink. Slight muscular cramps in the left calf muscles were complained of. There were two watery evacuations in the first half hour in hospital.

Progress of case.—Patient was given by hypodermic injection .016 gm. morphine sulphate and .002 gm. strychnine sulphate at 5.40 p.m. Hot water bag and warm bedding. At 6 p.m. .4 gm. quinine sulphate in capsule given by mouth and retained an hour. At 6.25 .002 gm. strychnine sulphate given hypodermically. At 7 p.m. .5 gm. quinine sulphate dissolved with .25 gm. tartaric acid and boiled was injected into the left buttock. The pulse at this time was slightly improved, irregular in force of beat and uncountable. Heart beat as before and 152 to minute. Pain relieved by morphine and vomiting and diarrhea checked.

Strychnine .001 gm. and brandy 4 cc. hypodermically every two hours, beginning at 8 p.m., was ordered and continued through the night.

At 9 p.m. extremities were warmer, pulse somewhat improved. Heart beat 132 per minute. Temperature by rectum 102.1 F. Given calomel .2 gm.

At 11 p.m. patient comfortable. Pulse could be counted and had fallen to 116. An intermuscular injection of .5 gm. quinine sulphate was given in the right buttock.

At 12 p.m. patient was quiet but had slept none. Pulse 108. Temperature (by mouth) 100°. Given .008 gm. morphine sulphate hypodermically to induce sleep.

Nov. 27, 9 a.m. Patient in good condition. No vomiting or diarrhea since 9 p.m. Pulse of fairly good strength and volume, 90 per minute. Temperature 97.8°. Ordered quinine sulphate in .5 gm. doses four times a day and with each dose .001 gm. strychnine and 8 cc. brandy, all by mouth. Also in addition to

the above .5 gm. quinine sulphate by intramuscular injection at 1 P.M. This treatment produced no symptoms of cinchonism. Magnesium sulphate 30 gm. had been given at 7 A.M., and this produced two evacuations. Urine negative.

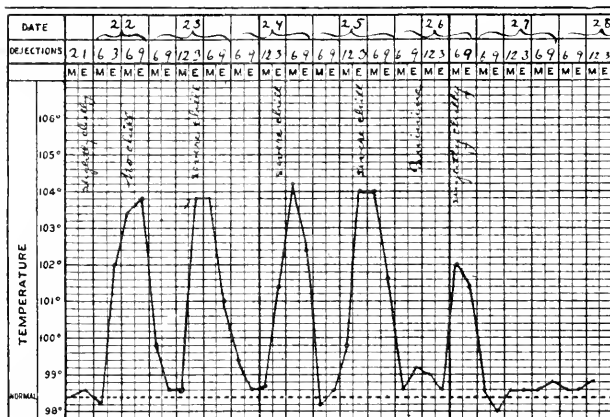
Nov. 28, 9 A.M. Patient in excellent condition. Temperature 99.4°. Pulse of 86 and of good strength.

Blood.—An examination by lamp light failed to reveal any organisms the night of entry. Nov. 27, in the morning, many actively aneoboid hyaline estivo-autumnal plasmodia from $\frac{1}{8}$ to $\frac{1}{4}$ filling normal sized

corpuscle were seen. Nov. 28, a pigmented body, at first with active pigment in a wreath form was seen. In ten minutes the pigment lost its motility but retained its ring arrangement, and the body appeared vacuolated and disintegrating. This was probably the "passive flagellated form" (macrogamete), described by Craig, prior to arrival of any flagella.

Diagnosis.—This case is considered to belong to the gastric and cardiac type (as described by Craig and Thayer) with several of the symptoms of the cholerae form added. Because of the impossibility

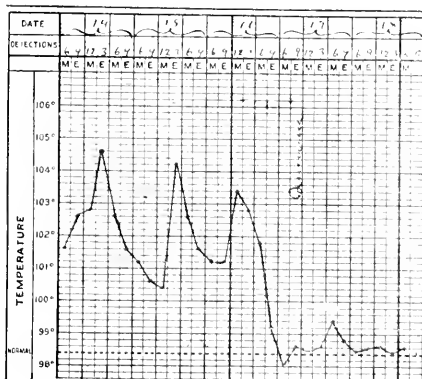
CASE I.



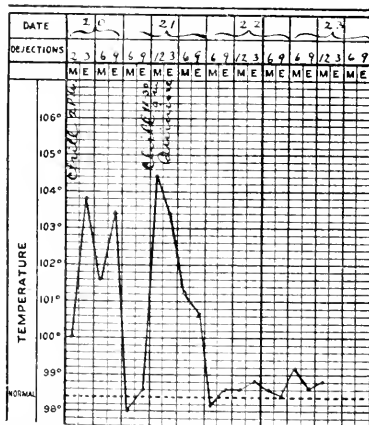
Diagnosis: Malarial fever, intermittent, quotidian (double benign tertian). Patient entered hospital for alveolar inflammation about a carious tooth. Malaria developed on second day in hospital. No plasmodia were found till Nov. 26, though repeatedly searched for several times daily by two physicians. On Nov. 26 two crops of benign tertian parasites were found, the number of parasites being small. The alveolar inflammation did not progress to suppuration.

CASE III.

CASE II.

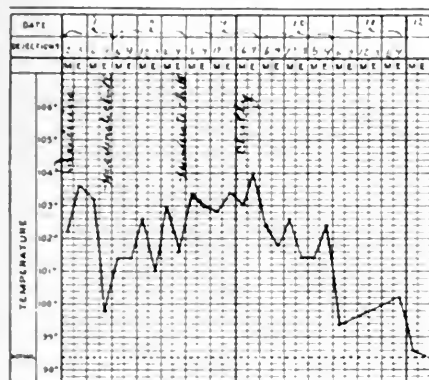


Diagnosis: Malarial fever, remittent, acute, due to benign tertian parasites. There was a moderate chill Sept. 13, 7 P.M., and none afterwards. The temperature dropped to normal on the third day and before any quinine was administered. Typical benign tertian plasmodia were demonstrated in the blood.



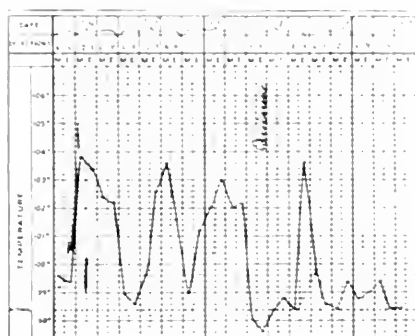
Diagnosis: Malarial fever, intermittent, quotidian (double benign tertian). The blood examination showed two crops of typical benign tertian plasmodia. The first paroxysm shows a pseudocrisis and authors as characteristic of the malignant tertian infections. Several other benign cases at Camp Gregg showed this pseudocrisis.

CASE IV.



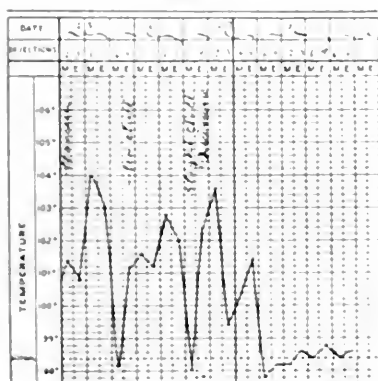
Diagnosis: Malarial fever, continued type, due to estivo-autumnal (malignant) infection. Estivo-autumnal plasmodia were demonstrated in large numbers in the blood. Quinine was begun Nov. 7 in doses of 8 gm. four times a day in solution. The temperature did not reach normal till Nov. 12. This case was the most resistant to quinine of any of the cases observed at Camp Gregg.

CASE VI.



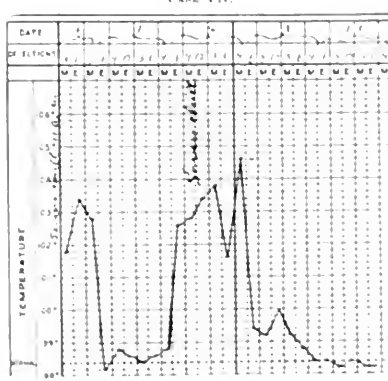
Diagnosis: Malarial fever, intermittent, malignant quotidian (estivo-autumnal). Estivo-autumnal plasmodia demonstrated in the blood. This patient had a severe chill 9 a.m., Nov. 20, and another 8 a.m., Nov. 22. No chills occurred after Nov. 22, but there was marked nausea, vomiting and abdominal pain at time of febrile paroxysms. The chart does not show a pseudo-remission when charted every three hours. The third paroxysm was charted hourly and then showed a marked pseudo-remission (18°) between 11 a.m. and 1 p.m.

CASE V.



Diagnosis: Malarial fever, intermittent, malignant quotidian (estivo-autumnal). The estivo-autumnal plasmodia were demonstrated in the blood. Each one of the paroxysms shows a distinct pseudo-remission and prefebrile rise of temperature. In each paroxysm the pseudo-remission began at the same hour, noon.

CASE VII.



Diagnosis: Malarial fever, intermittent, malignant tertian (estivo-autumnal). Estivo-autumnal plasmodia demonstrated in the blood. The second paroxysm shows the characteristic pseudo-remission in the blood by M'Connell, Craig and others and shows the long incubation time, febrile period before 6 a.m. till past 3 p.m., which is not seen in the shorter paroxysm seen in the benign tertian fevers.

of at once absolutely ruling out Asiatic cholera, which had been very prevalent here the preceding year, such precautions as would be of use in preventing the spread of cholera were at once put in practice.

From the condition of the patient at the time of entry it is believed that death would have been inevitable in a few hours if vigorous treatment had not been instituted.

DEDUCTIONS.

From the facts presented in this report the important deductions drawn are as follows:

1. That the great prevalence of malaria in 1904 was probably due to the presence of a remarkably large number of mosquitoes of the genus anopheles. The possibility of drinking water infection can almost certainly be excluded.

2. That the abundance of mosquitoes in the post resulted from the close approach of the jungle rendering the location and treatment of breeding pools impossible.

three times or even four times a week, will not in all cases prevent infection or relapse, though it usually does.

9. That malarial infections both benign and malignant existing for several days without chills or chilliness but with marked periodical febrile paroxysms were by no means infrequent.

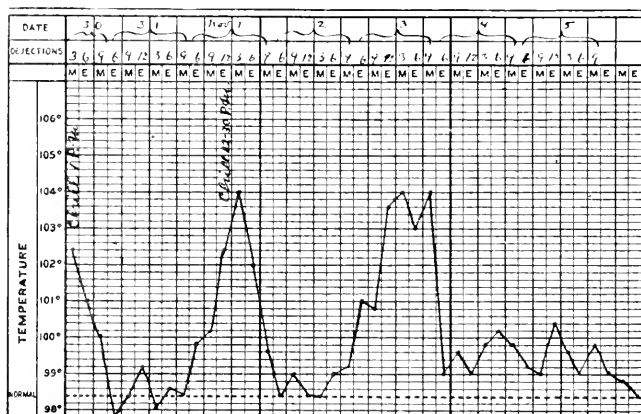
10. That clinically the estivo-autumnal infections could be clearly divided into remittent, quotidian intermittent and tertian intermittent. Of 62 cases 40% were tertians, 25% quotidians and 35% remittents.

11. That in 46% of the estivo-autumnal tertian intermittents a pseudoerisis and precritical rise of temperature was present in one or more paroxysms as shown by three hours chart.

12. That an almost identical pseudoerisis and precritical rise was observed in 9% of the benign tertian intermittents.

13. That no distinctive differences were ob-

CASE VIII.



Diagnosis: Malarial fever, intermittent, malignant tertian (estivo-autumnal). Estivo-autumnal plasmodia demonstrated in the blood. The third paroxysm shows a moderate pseudoerisis and also the long duration of the febrile period.

3. That the dangerous character of these pools was augmented by the long-continued wet season and intermittent occurrence of the showers and absence of many heavy rain storms.

4. That the prevalence of malaria increased as the season advanced, from May until December, in which month the disease began to decrease.

5. That the severity of malaria increased in the fall, especially in October and November, as shown by a rise in the number of estivo-autumnal and double tertian infections.

6. That quartan infections were infrequent in this vicinity.

7. That pernicious malaria did not occur at this post, probably because of thorough and prolonged treatment of the primary infection. The pernicious case reported in this series developed in the adjacent town.

8. That quinine sulphate in solution, .5 gm.

served in the parasites in the intermittent tertian and intermittent quotidian estivo-autumnal infections.

14. That nausea, vomiting and abdominal pain at time of paroxysm were extremely common in both benign and malignant infections. In 120 cases analyzed nausea occurred in 72%, vomiting in 42% and abdominal pain in 30%.

A REPORT OF THREE CASES OF PERFORATED GASTRIC ULCER; GASTRO-ENTEROSTOMY.

BY DANIEL FISKE JONES, M.D., BOSTON.

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GASTRO-ENTEROSTOMY in cases of perforated gastric ulcer may be discussed from an entirely different point of view than when considered in relation to simple uncomplicated ulcer. In the

latter case one must be convinced that the operation is going to be of permanent value to the patient or at least it must be of greater value than medical treatment, and the proof of this has not been thoroughly convincing up to the present time. In cases of perforated ulcer the patient must be operated upon, there is no choice between medical and surgical treatment; here the immediate condition of the patient is the important consideration so that one does not have to look ahead one or more years to see whether the operation is going to be of value then, so long as nothing is done to make the condition of the patient worse. The condition is such a serious one that we must consider every means to get the patient out of his present predicament. Gastro-enterostomy, then, may be considered as an operation for temporary relief and not necessarily as a permanent cure for the ulcer, though of course such a result may be attained.

Let me state at once that I am well aware that gastro-enterostomy cannot be done in every case of perforated gastric ulcer, nor do I believe that it is necessary. The number of patients, however, who will stand the extra shock of the operation is, I believe, much larger than is generally supposed. The great advantage, after operation, of the anastomosis will more than compensate for the slightly increased shock in most cases.

Although the operation is of particular value in cases where the perforation is situated at or near the pylorus or in the duodenum, it is a useful procedure in ulcer in any portion of the stomach.

Some of the reasons why gastro-enterostomy is of particular value in perforated ulcers are the following:

The ulcer is in an active state and presumably will continue to be active for some time regardless of treatment. Rest in bed, resting of the stomach, and feeding by rectal enemata cannot arrest the activity of the ulcer at once, and so long as the ulcerations remain active there is danger from hemorrhage, perforation of other ulcers, and involvement of the sutures closing the ulcer causing leakage. In spite of the experimental findings of Cannon and Blake that the greater portion of food is forced through the pylorus after a gastro-enterostomy, there must be some change produced by the operation which relieves the irritation of the ulcer, for it does give the greatest relief at once, and so far as we have any means of telling, the ulcer has a much better chance to heal.

In 20% of the cases of gastric ulcer the ulcerations are multiple (Mayo), and so long as these remain active there is a possibility, though perhaps a slight one, of a second perforation. A case operated upon by Dr. M. H. Richardson for perforated ulcer was apparently getting well when a second perforation occurred causing the death of the patient. Every effort should be made to prevent such an occurrence.

Pain is often a most trying symptom of gastric ulcer and this, added to the pain and discomfort of an operation, is very wearing on the patient. In all three reported cases the relief from pain after

operation was immediate, and permanent in cases II and III. That the pain of gastric ulcer is severe may be judged by the relief which the patients two and three expressed the first day after the operation. Both patients though they complained of some pain in the wound said that they had less pain and discomfort than they had had for some time previous to the operation.

In the three cases presented, the difficulty of closing the perforation in a satisfactory manner without narrowing the pylorus was the chief reason for the gastro-enterostomy. The large area of hard inflammatory tissue about the perforations made it impossible to close them satisfactorily in any case. In Case I an area of normal stomach to the left was folded over the perforation and simply caught there by a few sutures. In cases II and III after a very unsatisfactory suture some of the gastro-hepatic omentum was brought down over the opening. To have excised the ulcer with sufficient of the inflammatory area to have permitted a satisfactory suture would have made pylorotomy necessary, and gastro-enterostomy was considered much the less severe of the two. Gastro-enterostomy gave the ulcer a chance to heal and prevented any strain upon the weak line of sutures by giving free drainage at the lowest point, thus avoiding to a considerable extent the possibility of further leakage.

There may be a partial obstruction at the pylorus due to recent inflammatory changes, to cicatricial contraction of an old ulcer, or to some other cause not evident in a hurried examination, in all of which conditions a gastro-enterostomy would be a great benefit, at least, temporarily.

The problem of feeding these patients is a serious one, for many of them are in a wretched condition from hemorrhage, lack of nourishment and suffering, besides many of them have to withstand a long siege of sepsis, which makes a long period of rectal feeding impossible. Gastro-enterostomy is for these reasons of the greatest advantage, for the patients can begin liquids by mouth at once.

Besides these advantages we have the possibility of curing the patient permanently.

That there are disadvantages in this operation cannot be denied. We are putting an extra load on a patient already in poor condition and in considerable shock. It does take a few minutes longer but the shock of a gastro-enterostomy seems to be extraordinarily slight. In cases I and III the patients were in wretched condition, yet the gastro-enterostomy, which came after suture of the perforation and flushing of the abdomen, seemed to affect their condition very little.

Another objection to this operation in these cases is the danger of "circular vomiting" which must be expected in a certain small proportion of cases. None of the more elaborate methods which have been devised to avoid this catastrophe can be used because they require more time than the simpler methods. With a posterior gastro-enterostomy and a short loop of jejunum the ob-

currence of this condition is so rare that it need hardly be considered seriously.

Peptic ulcer of the jejunum is a remote danger of the operation but this also is so rare that it need not be considered as a reason for not operating in these cases.

The advantages of the operation when the patient is in a condition to stand the extra time required for it far outweigh the disadvantages, and gastro-enterostomy, if ever justified, certainly is in these cases whenever the condition of the patient will permit.

Posterior gastro-enterostomy by simple suture either with or without clamps with a short loop, or better no loop, of jejunum (Moynihan's operation) is to be preferred where it is possible to use it. Where clamps are used the greatest care should be taken to avoid injury to the mucous membrane for fear it may be the starting point of other ulcers.

The Murphy button, I believe, should not be used in these cases. This is also the view of F. König (*Zeitschrift für ärztl. Fortbildung*, 1904, IV, 1).

The McGraw ligature, though somewhat more rapid than simple suture, is not applicable to these cases. It seems to me, because one must wait from three days to a week before drainage is established, while it is of the greatest value to have an immediate opening.

CASE I. K. M., female, aged thirty-two, married, was seen in consultation with Dr. N. C. King of Brockton, Nov. 24, 1902.

The patient had had symptoms of gastric ulcer for about ten years, and had been on rectal feeding at intervals during all that time. Her stomach, she said, "was never right." Two days before entrance she had had an attack of severe pain in the left hypochondrium which gradually quieted down so that she could do her work. The morning before entrance she had another severe attack of pain in the left side of the abdomen, and at 3 P.M. she had still another, much more severe than the other two, so severe in fact that she fell to the floor and would allow no one to touch her.

Dr. King saw her at 6 P.M., when he found her in a profound shock, temperature 97.6°, pulse 76 and very feeble. There was marked rigidity of the abdominal muscles with intense general abdominal pain and pain radiating into the left shoulder. I saw her at the Brockton Hospital at 11 P.M., eight hours after the last attack of pain.

Operation. — An incision was made through the left rectus over the point of greatest tenderness and where an indefinite mass could be felt. The greater curvature of the stomach presented in the wound, adherent to the abdominal wall. The whole abdomen above the greater curvature in the middle and above the colon on either side was filled with stomach contents, and the pelvis with cloudy fluid. On the anterior wall of the stomach near the middle and about three inches from the pylorus was a perforation the size of a lead pencil. This was situated in about the center of a very much thickened and hardened area 3½ inches in diameter, extending upward over the lesser curvature and downward to the greater curvature. To close the perforation by sutures was impossible and to excise it meant a resection of a large part of the stomach, which the patient was in no condition to stand. A fold of normal stomach to the left was brought down over the opening and caught there roughly by a few catgut sutures.

An anterior gastro-enterostomy was then made with a Murphy button. Four gauze wicks were put in, one to the foramen of Winslow, one to the line of sutures and one into either flank.

The patient stood the operation remarkably well considering her condition before. Rectal feeding was begun at once, water in small quantities was begun in twelve hours and broth in twenty-four hours, and the quantity of both gradually increased.

The stomach folded over the original perforation unexpectedly prevented any leaking from it, but nine days after the operation there appeared a small perforation an inch below the original, in that portion of the stomach presenting in the wound. This gradually enlarged in spite of rectal feeding and absolute rest for the stomach. The patient was therefore put on to feeding by mouth again as she was going down hill rapidly; this apparently changed the conditions somewhat, for the ulcer began to close. Unfortunately, a third ulcer appeared at this time just below the second. It was impossible to nourish the patient sufficiently now, and she died of exhaustion, three weeks after the operation.

After death the Murphy button was found in the stomach in the region of the ulcers.

CASE II. W. R., male, aged forty-eight, was seen in consultation with Dr. J. P. Shaw of Brockton, Nov. 11, 1904.

For eight years the patient had had symptoms of gastric ulcer. For four years he had had hemorrhages from the ulcer two or three times a year. The last hemorrhage occurred three months previous to the perforation and was so severe that the patient became very much exsanguinated. During the last few years he had been on rectal feeding at frequent intervals.

For two weeks prior to operation the patient had had a good deal of distress about one hour after eating. Four days before operation he began rectal feeding, but on the next day he had soft stool and an egg for breakfast, and then went down town to vote.

The next day he had soft food all day, and vomited once. The following day he went on to rectal feeding again. At noon time, after eating some soft food, he had a little pain in the epigastrium. At 7 P.M., while sitting reading, he had a terrific abdominal pain, and immediately went to bed. He was given morphia gr. ¼ with no relief. An hour later the temperature was 97.2°, pulse 120.

At 9 A.M., the next morning, when I saw him, the patient was somewhat easier, but his abdomen was rigid and tender, his respirations short and jerky and his expression anxious. Temperature 100°, pulse 108. He was removed to the Brockton Hospital and the operation begun at 12.10 P.M. An incision was made through the right rectus; upon opening the abdomen, the transverse colon presented; below this the abdomen was nearly normal in appearance, while above, the omentum was adherent to the abdominal wall. The lower part of the abdomen was walled off with gauze, after which the adhesions were broken down, allowing a large quantity of fluid and stomach contents to escape from above the stomach. A perforation was seen exactly on the lesser curvature, an inch from the pylorus, surrounded by a hardened area 2½ inches in diameter. It would have been impossible to have excised this area without doing a pylorotomy, which was not to be considered under the circumstances. The perforation was therefore closed as well as possible and some of the gastro-hepatic omentum brought down over it. A posterior gastro-enterostomy was then done with a short loop and simple suture, after which the whole infected area, including the lesser peritoneal

cavity, was washed out. Wicks were then placed into the lesser peritoneal cavity and to the site of the perforation.

The convalescence was uninterrupted in this case, with immediate relief of symptoms. He was given water in small quantities the first twenty-four hours, after which broths in small quantities were added and gradually increased.

The relief which this patient experienced immediately was most marked; every time I saw him he expressed his surprise at the slight discomfort from the wound and the great relief the operation had given him.

CASE III. T. R., male, aged twenty-five, married, tailor.

This patient was first seen by me on Nov. 14, 1904, at his place of business.

He had had symptoms of hyperacidity for somewhat over a year.

Three days before, Nov. 11, he had had an attack of pain in the right iliac region with vomiting. The pain subsided after twenty-four hours but soreness remained for twenty-four hours longer. At 3 p.m., on the day I saw him, two hours after a light lunch of a sandwich and coffee, the patient again had an attack of pain in the right iliac fossa similar to the one three days before; there was, however, no vomiting. When I saw him at 4 p.m., he was lying with his knees drawn up, with marked tenderness and some rigidity over the right iliac fossa; over the rest of the abdomen there was no tenderness or rigidity; there was pain, however, referred to the region of the appendix whenever pressure was made on any part of the abdomen. There was also a reddened area over the appendix where the hot water bottle had been.

The patient was sent to St. Margaret's Hospital at once for appendectomy, as the diagnosis was appendicitis in spite of the earlier gastric symptoms which the patient made very light of at that time. Another point which suggested appendicitis was the attack of pain in the right side three days before, with tenderness remaining in that region for two days.

While waiting for his parents to get to the hospital the patient had a most terrific attack of general abdominal pain; he was pale and perspiring, his pulse was small and feeble and vomiting was constant.

When I arrived an hour later it was evident that the condition had changed from a local to a general one, and without stopping to examine the patient it was taken for granted that the appendix had perforated, causing a general abdominal infection.

Operation.—An incision was first made over the appendix when the abdomen was seen at once to be full of stomach contents and the appendix to be normal in appearance. This incision was left open and another made through the right rectus downward from the costal border close to the median line. A perforation the size of a lead pencil was seen on the lesser curvature about an inch from the pylorus. This opening was surrounded by a very much thickened and hardened area extending from the pylorus, upward, somewhat on to the posterior wall and downward toward the greater curvature.

The only possible way to excise the area was to resect that portion of the stomach with the pylorus, which was, of course, impossible with the condition of the patient. To make a suture that would hold seemed impossible. A single row of Lembert sutures of catgut was put in, drawing the walls together as well as possible and some of the gastro-hepatic omentum caught over this.

A posterior gastro-enterostomy was then done by the simple suture method.

The whole abdomen including the lesser cavity was

washed with salt solution, a wick put into the lesser cavity, one into the pelvis and one to the line of sutures over the perforation.

The after treatment was the same as in cases I and II. The marked relief which this operation gave was very noticeable, for the morning following the operation the patient expressed himself as having had a very comfortable night, and from that day until he left the hospital his only complaint was that he did not get enough to eat.

The only complication in this case was a very mild stitch hole infection with no temperature, about twelve days after the operation. Just before the stitches were removed the patient said that the wounds felt rather sore, but they were both very dry and the stitches had not cut. Three days after removal of the stitches hardened areas could be felt about some of the stitch holes but very deep. These areas finally became more superficial and were opened, when a very thick tenacious pus escaped from the sub-peritoneal space. The surface of the wound was so dry and clean, and the infection started so deep and was so long getting to the surface that it seemed to me to be a case of infection of the stitches from the peritoneal surface rather than from the skin.

The points of interest in the above cases are as follows:

All cases were perforations of chronic ulcers, the history of ulcer varying from one and one-half to ten years. The perforation occurred in the midst of a large indurated and thickened area which made it impossible to close the perforation by sutures with any degree of security.

The ulcers were located, in cases II and III, about an inch from the pylorus, directly on the lesser curvature, while in Case I it was about 3 inches from the pylorus and 14 inches below the lesser curvature. The situation of the ulcers and the extent of the stomach wall involved by the chronic inflammatory process made resection of the ulcer and indurated area impossible without resection of the pylorus, while closure of the ulcer by suture without resection was very unsatisfactory.

The time elapsed between the time of complete perforation and operation was respectively eight hours, seventeen hours, and one hour.

In cases I and III there was probably leaking of the ulcer before the flooding of the abdomen took place. In Case I this occurred twice, thirty-six and twelve hours before, while in Case III it occurred three days, and four hours before the flooding of the whole abdomen.

A gastro-enterostomy was made in all three cases, in Case I with a Murphy button, in case II and III by simple suture. In Case I I believe that the Murphy button was the cause of the second and third perforations. With the poor general condition of the patient and the condition of the secretions which brought about the original perforation, I believe that the presence of the button caused sufficient injury to the mucous membrane to start the second and third ulcers, which were at the lower part of the stomach in the region in which the button was found. I could certainly never use the button again in such an operation.

Anterior gastro-enterostomy was made on Case I, while the posterior method with a short loop (Moyuahan) was used in cases II and III.

All three cases recovered from the immediate effects of the operation, but case I died in three weeks of exhaustion as a result of the second and third perforations.

Case II gained 44 pounds between November and February and is in excellent health at this time, October, 1905.

Case III has been perfectly well ever since the operation and has no gastric symptoms whatever. He is in excellent health at present, October, 1905.

SHOES AND FEET.

BY ROBERT ROUTTER, M.D.,

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SINGLE or incomplete ideas given to a shoemaker make him build his shoe accordingly, only to find himself left with a stock for which there is no market. One company made Thomas heels and greatly advertised them, but doctors did not appreciate it. Another firm finding that arch supports are essential to all feet has gone to considerable trouble to make steel shanks right and left. (Fig. 1.) Shanks are usually made of flat steel cut from the sheet. This company made

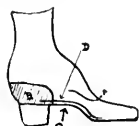


FIG. 1.

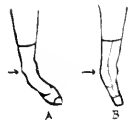


FIG. 2.

FIG. 1.—A, the vamp seam which will not stretch. B, the counter which grips the os calcis. C, the shank of the shoe. D, the steel shank.

FIG. 2.—A, shoes, front view of a bad position of the ankle astragalo calcaneus valgus and abduction of the front of the foot. B, posterior view of the same.

two shanks, one curved for the left arch and the other for the right. Unfortunately the shank was placed under the outside of the foot. Another firm made a last, secured the indorsement of a number of doctors in Boston and in New York. The shoemaker advertised this broadcast, threw away the last and still sells shoes using the same advertisement. At present the shoemaker is afraid to follow shoe ideas as doctors have not been sufficiently agreed to insure a market for good shoes. On the other hand if the physician indorses a shoe, as soon as the market is assured the shoemaker may make whatever he likes and give the counterfeit to the customer. Ingenious methods have been devised and elaborate agreements signed to hold a shoe factory to a patent. The shoemaker dodges these patents and uses the stamp as if the patent was employed. Shoemaking is difficult to understand. Asking for one point changed on a shoe alters the mechanics of the shoe in a way that can be foreseen only by the experienced shoemaker. Orthopedic lines may give atrocious wrinkles.

Take the foot of an adult or of a child which has worn no shoe or else well-fitting sandals for

several months. If the feet in question are not deformed, such feet will have no pressure marks except on the sole and no areas of congested skin. The appearance of the skin and feeling of the tissues on the dorsum is that of a healthy exercised hand. A young woman takes off her shoes and stockings. Her feet never touch the floor excepting in shoes or slippers. The foot is delicate, atrophied, the toes pressed together and the phalangeal joints flexed. The outline of each toe is impressed deeply into the sides of the next; there are small calluses on the sides and sole of the foot and on the toes and under side of the toes. In an inactive person the foot is pale and cold; there may be pressure marks which, by the way, are not necessarily painful. On the other hand, in an active or plethoric person such a foot is blue or purple in areas due to the congested superficial circulation and the pressure marks are more evident and may remain some time after the shoe is removed. The foot has been gradually distorted by the shoe pressure.

A very large proportion of trouble with feet is caused by shoes. The best shoe that can be bought will affect the foot to a more or less degree. What can be done to prevent these marks of abuse which, when age comes on, makes walking such a burden?

Notice on the street how few people walk unconsistently of their feet and how many awkwardly because of shoes. The relation of the foot and leg in carrying the body weight is important. The internal malleolus should not be prominent. In other words, there should not be an astragalo calcaneus valgus. (Fig. 2.) The weight transmitted through the tibia should, if the line is prolonged, stick well to the outer side of the foot and under the anterior position of the os calcis. Do what you will to the foot you cannot right its faults until the weight bearing is advantageously placed. Next, the front part of the foot should be slightly adducted. In a stiff foot these positions will take the ball of the great toe off of the floor. The foot will limber up in time or appropriate treatment for this purpose can be applied. In action the front foot is often markedly adducted, especially in running, and flexibility in this direction is desirable. When the shoe makes this impossible there is marked restraint and loss of power resulting later in weakness and stiffness. The foot should be made flexible and its muscular tone improved; plates avoided and used only by the surgeon with the understanding that they will limit the motion. The shoe should be flexible. Heavy and stiff soles should be avoided. The front part of the foot and the toes must be allowed freedom of motion and not be compressed by the upper or vamp seam. The calf muscles must not be shortened nor the tendo-Achilles pressed on by the counter or its seam. This pressure can produce considerable tenosynovitis.

Having placed the weight advantageously, made the foot flexible and strong and given the toes freedom of motion, select a shoe that does as little harm as possible. Shoemakers make shoes primarily to sell. The fashion of the shoe

is based on lines selected in the ages when natural types were avoided. The fashionable high heeled shoe is as far from the natural outline as the tight-laced figure is from the ideal Greek figure. (Fig. 3.) Women have discarded tight lacing of



FIG. 3. — This shoe causes the flexion of the toes and slides the foot into the narrow space for the toes.

the chest and to some extent of the waist. Physical outlines are becoming more admired. It will not be long before tight shoes and toeing out will be superseded by a natural shaped shoe and straight gait.

To prescribe a shoe with an adducted front part seems simple. In comparing lasts one shoe that seemed at first to be in good line anteriorly was practically the same as another which seemed not as good, the difference being due to a clever optical illusion practiced by the shoemaker. (Fig. 4.) This consisted in curving the inner line of the shank and the anterior line of the heel so that they seemed different until the two soles were traced on paper and the tracings superimposed.



FIG. 4.

FIG. 5.

FIG. 4. — B is a shoe having neither right nor left. A is the same shoe with the optical illusion from the cut of shank leather and anterior line of heel.

FIG. 5. — There should be room at B in the upper, the sole may curve in.

A shoe with room (at *b*, Fig. 5) on the outer side of the shank over the cuboid will not necessarily be lacking in this if the sole does not show it. In other words the upper must be considered as well as the sole.

The chief fault of the present method of shoe making is that the shoe is made for an astragalo calcaneus valgus. (See Fig. 2.) It is impossible to adduct the front of the foot satisfactorily or get a good line of the great toe until this is corrected. Shoemakers cannot be expected to get a really trig shoe on orthopedic lines until this fault is overcome in the patient as well as in the shoe. This year the heel on the outside is as high or higher than the inside. The shoe curves in just anterior to the outer side of the heel and there is a wide sole on the outer side causing abduction of the front of the foot. (Fig. 6.) The counter is long and grips the os calcis throwing its anterior part in and its upper part over in-

ward. (Fig. 7.) Both these factors produce astragalo calcaneus of medio tarsal valgus and aggravates any tendency to hallux valgus or to flat foot. Then again, the toes are pressed together or into each other so that the toes have angular outlines and depressions, some toes often overriding the others, and the toes are flexed and cramped. (Fig. 8.) The semi-condition of hammer toe is bad enough, but in addition the first phalanges become, one or all, almost perpendicular, or at an angle of forty-five degrees flexion on the metatarsals causing calluses under the ball of the foot, and perhaps this is one of the prominent factors in producing Morton's disease. (Fig. 9.)

This dorsal flexion of the first phalanx on the metatarsals is a serious condition and should be corrected before it is advanced and before the joints become stiff. It is present to some degree



FIG. 6. — Showing the broad outward curve causing abduction of the front part of the foot and the inward thrust at B, on the outside of the shoe.

in the majority of anterior arch cases. In the milder ones it occurs only when the shoe is on; in the worst cases the extensor tendons are shortened and the cure is made correspondingly difficult. (Fig. 10.) Many people cannot move their toes with any degree of proficiency. Their toe joints and muscles are unused and the stiff condition results so gradually that there is no discomfort in the process. The dorsally flexed first phalanx and hammer toe is not only caused by the pinching and over-riding of the toes and by forcing the foot forward into a narrow-toed shoe in walking, but the high heel pushes it forward and also, by raising the tarsus and metatarsal, increases the position of dorsal flexion of the phalanges. (Figs. 11 and 12.) The shank being stiff and meeting the sole at an angle acts as a splint and the unyielding vamp seam with



FIG. 7. — Showing the counter C. A is the outer side of the foot. B, the inner side, the heel is displaced laterally outward and raised on the outside by the shoemaker.

every step forces the first phalanx into dorsal flexion.

The sole under the ball of the foot besides failing to follow the lines of a slightly adducted and weight-balanced foot is made up on the sides of the double thicknesses of the upper and the lining. (Fig. 13.) This causes a gap or air space

between the inner and outer sole. B, which is sometimes filled in an imperfect way with ground cork or leather, and more often left unfilled. As a result the foot is held up at the sides and falls in the middle. This is one cause of anterior arch troubles. (Fig. 14.) The lumping of the upper and upper lining where they are stitched acts as a



FIG. 8.



FIG. 9.

FIG. 8.—Deformity from high heel, the tight upper and imperfectly filled dead space between the soles.

FIG. 9.—Showing dorsally flexed phalanges on metatarsal and the shortened tendon at A, originally caused by shoes.

pad under the posterior part of the os calcis and tends to tilt and flatten the arch of the foot (Fig. 15), and with a high heel to shorten the tendo-Achilles.

The faults of too long a counter, stiff uppers, hard toe caps, the counter squeezing the foot forward and the incurve of the shoe gripping the Achilles tendon are all worthy of consideration.



FIG. 10.



FIG. 11.

FIG. 10.—Front view of an extreme case of the same. These toes cannot be made to touch the floor.

FIG. 11.—Flexion of the toes by a high heel, tight vamp seam at A and a long steel shank at B.

If you make a shoe flexible in adduction and in dorsal flexion the heel must be made higher on the inner side so that it will not wear here; otherwise the flexible shank will cause the shoe to slump. This is true as long as heels are used. If the shank is omitted, therefore, something must be substituted, some mechanical device to prevent the shoe from slumping unless the heel is abol-



FIG. 12.

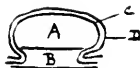


FIG. 13.

FIG. 12.—Showing the thrust forward against the tight vamp seam A.

FIG. 13.—Diagrammatic cross section of the front of a shoe. A—space for foot, B, dead space between the sole and inner sole caused by the lumping at the sides of the upper D, and the lining C.

ished or made almost nothing. The best substitute is a slanting heel, high at the inner and anterior part and sloping back and outward.

To summarize briefly the desirable points of

the foot and the qualities of the shoe that effects them: First,

The factors that interfere with a good position of the internal malleolus or advantageous weight bearing are: The heel higher on the outside, the stiff shank and tight vamp seam combined, the slanting and long stiff counter and the placing of the heel on the outer side of the shoe.

A good line of the great toe is interfered with by a tight shoe cramping the toes, by anything that causes abduction of the front of the foot, by anything that produces valgus at the astragalous calcaneus articulation, by heel slanting inward, by the shank being stiff and combined with a tight vamp seam and by a tight upper.

Proper play of the toes is limited by the width of the front part of the shoe, by a tight vamp



FIG. 14.

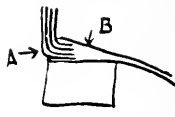


FIG. 15.

FIG. 14.—Showing the sagging of the inner sole and the way the sides of the foot are forced up at the sides. A, foot, B, sole, C, inner sole.

FIG. 15.—A, the lumping of the lining counter, counter lining and the upper under the posterior part of the os calcis.

seam and a stiff shank, by a tight upper, by a high heel, by a thick sole and by a stiff upper.

Adduction of the front foot and flexibility in this direction is limited by the high outer side of the shoe, by the high heel higher on the outer side, by too tight a counter and by lack of fullness over the cuboid.

Flexion of the first phalanges on the metatarsal may be caused by pinching the toes, by a high heel, by angular steel shanks, by dead space between the sole and inner sole and by a tight vamp seam and stiff shank.

In order to make the foot admired it must be held in a position of strength, have the appearance of health and be free from signs of abuse. This brings up the point of the wearer who, in a measure, should be considered. What he will wear when his feet are lame he will not when they are well until public opinion allows that good feet are better than French shaped shoes. For those whose feet are not yet lame, by correcting the worst faults of shoes and allowing the lesser ones to remain for the present, some sense may be smuggled in with the shoes and the unsuspecting customer be spared a future visit to the office.

DAZZLING HEALTH STATISTICS.

BY THOMAS J. MAYS, M.D., PHILADELPHIA.

The value or the worthlessness of a proposition is determined not by its promises, but by its performances. In the light of this criterion let us see where some of the phases of the contagion theory of consumption stand. It may be said that he who in the absence of a full knowledge of this doctrine studies most of its recent literature will probably conclude that if this disease is not

already "wiped out" through its instrumentality, it is so near that point that only a short time is required to complete this task. No Sellenian eloquence has ever extolled and magnified the virtues of any remedy with greater skill than that which is made use of in exploiting the specific value of the bacillus theory as a means of annihilating pulmonary consumption.

In 1892 Dr. Lawrence Flick of Philadelphia, one of the pioneer devotees of this theory, contributed a paper to *The Medical News* for May 14, 1892, in which he claims that owing to the conversion of the medical profession of this city to the notion that consumption spreads through dried consumptive expectoration, and that in consequence of the care which was taken in at once destroying this contagious matter, 784 lives had been saved annually to this city from 1882 to 1891.

Whether the medical profession of Philadelphia has been converted to the contagion theory is, perhaps, not very easy to determine, but it is not difficult to demonstrate that the saving of 7,840 lives from consumption in ten years by means of bacillary devices, or by any other influence, is a fantastical misconception and is based on a strange and remarkable twisting of the plain meaning of recorded facts.

Any one who will take the trouble of looking up the health records of Philadelphia will find that the deaths from consumption, instead of decreasing 7,840 in number from 1882 to 1891, as stated by Dr. Flick, only diminished 640 in number, or 64 a year, while the population increased 22% during the same time. Is even this small decrease traceable to any such plans of prevention as are designated by Dr. Flick? Hardly. For if this was the true cause, its influence must have been greatly nullified in the following decade, since from 1891 to 1901, the decline of this disease numbered only 471, or about 43 a year, while the population increased 23% in that time. It is, therefore, beyond the bounds of ordinary reason to conceive the nature of the transcendent mathematical methods which are made to figure out how 7,840 people were saved from consumptive graves in Philadelphia in ten years from 1881 to 1891, when actually there was only an average annual decrease of 64 deaths during that period. A diminution of 784 consumptive deaths in a year would necessarily wipe out this disease in Philadelphia in less than four years, yet statistics show that it is nearly as fatal at present as it has been for the last decade and a half.

Equally extravagant and misleading is the declaration¹ of Dr. Hermann M. Biggs, medical officer of the New York Health Department, that at least twenty thousand lives have been saved from consumption in New York City from 1886, when registration and disinfection measures were first legally introduced for the suppression of this disease, to the year 1901. This means an average annual reduction of 1,333 consumptive deaths from an average of about 5,000 yearly deaths

during this period. On referring to the health statistics of old New York City, i. e., the boroughs of Manhattan and the Bronx, it will be found that from 1886 to 1901 the population increased 45%, and that instead of saving 20,000 persons from consumptive graves, as stated by Dr. Biggs, there is an actual total reduction of about 2,500 deaths from this disease, or about 150 a year during that time. (The fact that Greater New York was formed in 1898 does not alter these figures very relatively, since the old New York statistics cover the period here surveyed, except the four years from 1898 to 1901.) Almost identical results are obtained, if the increase of population and the increase of consumption are calculated from year to year, or from the beginning and the ending of this period. As has been shown to be the case in Philadelphia, most of this decrease occurs in the early and not in the later part of this period, and gives evidence, therefore, that the virtue of disinfection and registration, if any such exists, has declined materially in recent years. Furthermore, the absurdity of the statement that consumption decreases to the extent of 1,333 deaths a year becomes very obvious when we consider that such a rapid reduction rate would have totally destroyed consumption in New York City in about four years, or as long ago as 1890, yet statistics of the New York Health returns point out that the annual average of about five thousand deaths have occurred from this disease in old New York from 1890 to 1901.

These are some of the statistical obsessions that have helped to force the conviction on many minds that consumption is conveyed from the sick to the well by means of the tubercle bacillus, and that all that is necessary to destroy this disease in a single generation, as has been asserted over and over again, is to use scrupulous care in keeping apart the sick and their expectoration from the well, and to fumigate and disinfect the surroundings of the former. In and out of season we hear of the recent fabulous reduction in the consumption rate of New York and Philadelphia since fumigation and disinfection were installed, and of the claim that what is possible in these places is applicable everywhere, and that results will amply demonstrate that the remaining deaths "are to a very great extent unnecessary." Lightning arguments of this kind have had the effect of sowing widespread misapprehension and demoralization among the laity in regard to the danger of this disease. Social and family relations have been greatly disturbed in consequence. No employee who is suspected of having consumption is safe in his position to-day, no matter how capable he may be to perform his work. Hotels, boarding houses, and even health resorts close their doors against such invalids. Several State Boards of Health in this free country of ours refuse to employ teachers who are affected with this disease, and many hundreds have been dismissed or refused employment. Children who cough and expectorate are debarred from attending the schools of one of these states. It is stated on reliable authority that consumptive employees

¹New Tuberculosis, Its Cause and Prevention, published by the Committee on the Prevention of Tuberculosis of the Charity Organization Society of New York City.

in the government service at Washington are dismissed, and that a Pennsylvania town makes the regulation that barbers shall not shave consumptives. The Board of Health of Jersey City recently adopted a resolution refusing the accommodations of the public waiting rooms and passageways of the ferry buildings to traveling consumptives, compelling the providing of special cars for the transportation of such passengers, and ordering thorough fumigation and disinfection under the direction and supervision of the Board of all cars or trains used for this purpose.

One may smile at such matchless senility, but what is to be thought of those who furnish the foundation on which such schemes of folly are erected? Is it not the work of the germ theorists who for years have dinned into the ear of the people that this disease depends solely on communication between the consumptive and the healthy that is responsible for this public sentiment? Under these circumstances what can the laity, who form not an unimportant part in molding and in composing the membership of our health boards, be expected to know? Do they know that the germ origin of consumption is contrary to the plain dictates of medical experience? Do they know that with a few unimportant exceptions, not an author who has written a special work on this disease, either in the English or the German language, unqualifiedly indorses this theory? Do they know that the germ theorists base the contagion theory of this disease on animal experiments, that when they find a certain fact in the experimental animal they at once reason backwards and conclude that because this is true in the latter it *must* be true in the human subject—thus actually treating this whole question largely as if it related to veterinary and not to human medicine? Is it any wonder that under perverted leadership during the last ten or fifteen years, pulmonary consumption has latterly increased in Philadelphia and New York cities? and that, on the whole, the practical results of the treatment of this disease are not better, if as good, as they were twenty or thirty years ago?

Medical Progress.

RECENT PROGRESS IN LARYNGOLOGY.

BY A. COOLIDGE, JR., M.D., BOSTON.

MANUEL GARCIA.

A NOTABLE event during the past year was the celebration of the one hundredth birthday of Manuel Garcia, who fifty years ago laid the foundations of modern laryngology. Although a few attempts, more or less successful, had been made in previous years to see the glottis, to Garcia belongs the credit of introducing the practical use of mirrors to see and study the larynx. An interesting paper by Farlow, written at the time of the Garcia celebration and containing the early history of the laryngoscope, appeared in this JOURNAL of April 20. It is truly a unique

occasion, when a man, who at the age of fifty inaugurates a technique which develops into an important specialty lives to celebrate his hundredth birthday surrounded by men from all parts of the world who have made themselves known through this special work. Garcia was born in Spain so long ago that he was obliged to leave the country owing to the advance of Wellington's army in the Peninsular War. His father and sister were well known operatic singers, and he started in life in the same vocation, appearing in opera in New York eighty years ago. He soon afterwards left the stage and devoted the rest of his active life to teaching music, at first in Paris, later in London. His interest in the larynx was therefore confined to its physiology, especially with reference to tone production. The birthday celebration took place in London. He was received by the king, and entertained at a banquet at which more than four hundred guests took part. He received addresses and messages from all over the world and was presented with a picture of himself by Sargent. Not the least interesting point in connection with this celebration is the fact that it was also the fiftieth anniversary of the introduction of the laryngoscope.

THE SUBMUCOUS OPERATION FOR DEFLECTION OF THE NASAL SEPTUM.

During the past year this operation has been the subject of several papers which, without introducing anything essentially different from the methods of the few preceding years, contain many interesting details of technique and instruments. Killian¹ describes his operation in detail in a paper which should be carefully studied. He considers that the essential feature of his technique is the use of his long specula. After the mucous membrane has been separated from both sides of the septum the speculum is passed through the incision in the mucous membrane, and one blade through the incision in the cartilage also. The blades then have the denuded septum between them, in a median space between the two septal mucous membranes. By opening the speculum this space becomes large enough to give ample room for the removal of as much cartilage and bone as is necessary.

A description of the operation by Freer appeared in this JOURNAL a year ago.² Another comprehensive paper by the same author³ describes not only his own methods, but also reviews the details of the operations of others. He advises the older form of incision through the mucous membrane, two cuts at right angles to each other over the angles of deflection, in preference to the single anterior incision of Killian, Hajek and others. Among his interesting conclusions may be mentioned the following: the operation is adapted to children, but the chance of a possible recurrence from the effect of growth demands a very complete removal of the deflection. The firmness, and, therefore,

¹ Archiv. fur Laryngol., Bd. 16 Heft. 2. Translated by Foster. Annals Otol., Rhinol. & Laryngol., June, 1905.

² Boston Medical & Surgical Journal, Feb. 2, 1905.

³ Transac. Amer. Laryngol. Assn., 1905. Annals Otol., Rhinol. and Laryngol., June, 1905.

probably the cartilage and bone of the septum, is completely or nearly completely reproduced in the window after the resection. The lower portion of the quadrangular cartilage, as high as the level of the ala nasi, may be resected without fear, from its anterior inferior free border horizontally back to the bone. The recumbent position of the patient is best for the operation, except in operating along the nasal floor. The presence of a nasal angle in an instrument complicates its movements, and makes it necessary to hold it with a stiff wrist and fingers, thus sacrificing the lightness and accuracy of motion of straight instruments. With the exception of fragments cut with the chisel from the crista incisiva or anterior end of the vomer, neither cartilage nor bone should ever be broken, twisted or torn from its attachment, but should be cleanly cut away. Sewing is needless; strips of lint impregnated with sublimate of bismuth makes the best tampon. The author introduces the strips in layers by which the flaps are perfectly held in place.

Ballenger⁴ has introduced an ingenious knife in which a stirrup blade swings as a swivel between the tips of two prongs. The prongs are placed astride of the denuded cartilage which is cut by the blade as the prong tips describe the outline of the cartilage to be removed. As much cartilage as is desired is thus quickly removed in one piece.

A modification of the incision through the mucous membrane is described by Yankauer.⁵ A single vertical incision is made so that its lower end corresponds with the anterior edge of the nasal floor. It is then continued outward on the floor of the nose half way to the ala, and the mucous membrane, perichondrium and periosteum are separated and reflected outward upon the outer nasal wall. This gives a large amount of room for subsequent work.

NASAL DIPHTHERIA AND OPERATIONS.

The fact that the bacillus of diphtheria may exist in the nose unsuspected should be constantly borne in mind, and especially before beginning any operation in the throat in children. From his large experience in diphtheria McCollom⁶ concludes that many serious outbreaks are due to the fact that some member of a family or inmate of some institution has had a profuse discharge from the nose without any constitutional disturbance and has been the focus from which has arisen many severe cases of diphtheria. This is not a theoretical statement, but is the result of experience. Every profuse discharge from the nose, particularly if there is any excretion about the nostrils, should be looked upon with suspicion and cultures should be taken. If adenoids are to be removed, cultures should always be taken before the operation is performed, for it sometimes happens that a child who has a profuse discharge from the nose, immediately after the removal of adenoids or the ablation of the tonsils, has a severe attack of diphtheria. If

the operation for cleft palate is to be performed, it is still more important to take cultures; because if there are any bacilli of diphtheria in the nasal discharge, this organism is sure to grow upon the cut surfaces of the operative tract, and the patient not only has an attack of diphtheria which may be mild or severe, but also the edges of the wound slough and render a second operation much more difficult.

The whole subject of latent diphtheria and the varying forms of diphtheria bacilli is of the greatest importance in connection with the health and oversight of children. A paper by P. Watson Williams⁷ offers an excellent summary of these questions. A nasal catarrh, increased pulse frequency, an irritable heart, a redness of the fauces, or slight tonsillitis, may severally be the only symptoms, and yet, if due to diphtheritic infection, it is pathologically diphtheria. But the presence of virulent diphtheria organisms in the nose and throat, unassociated with any local or tissue changes, is not diphtheria, although in recent contacts such inoculations may rapidly pass into diphtheritic infection. The diphtheria organism is not only exceedingly polymorphic but variable in its virulence, from the highest virulence to absolute nonvirulence, while the susceptibility of the host likewise varies within wide limits.

THE DEVELOPMENT OF THE ACCESSORY SINUSES.

From the study of skulls of the fetus and infants and from a review of the literature of the subject Collin⁸ makes the following deductions: But two of the accessory sinuses are present at birth, — the ethmoidal cells and the maxillary antrum; the antrum does not in infancy occupy the same relative position in regard to the orbit as in later life, and cannot be reached or entered by the usual methods; neither can this be done nor satisfactory drainage effected until after the descent of the second or permanent teeth without the destruction of a tooth socket. It makes impossible also the intral route to the ethmoid and sphenoidal sinuses during this period of life. The sphenoidal sinus makes its appearance shortly after birth and may be found as a distinct cavity as early as the end of the first year. Practically, however, it may be considered as the most posterior of the posterior ethmoid cells. The frontal sinus is not present at birth. It appears first in the orbital plate of the frontal bone between the end of the first and the beginning of the third year. Practically at this time it is the most anterior of the anterior ethmoidal cells; it may be seen in the vertical portion as early as the end of the third year. This is early, however, at its appearance in the vertical portion should be put down from the third to the sixth or seventh year.

RADICAL OPERATION OF THE FRONTAL SINUS.

A series of papers on the diseases of the accessory sinuses, with the discussion of the anatomy of the sinuses, appeared in the *Transactions of the American Laryngological*

⁴ *Annals Otol., etc.*, June, 1905.

⁵ *American Journal of Surgery*, June, 1905.

⁶ *Laryngoscope*, Sept., 1905.

⁷ *Journ. Laryng. & Rhinol.*, July 1, 1905.

⁸ *Am. Journ. Med. Sciences*, Feb., 1905.

logical Association for 1905,"⁹ and represents very well present views and differences of opinion, especially as held in America. In relation to the frontal sinus the impetus to radical operation by the introduction of the operative methods of Ogston, Luc, Kuhnt, Jansen and Killian, a few years ago, has stimulated study of and attention to this cavity. In this country Coakley has established a method of proceeding which makes a summary of his experience interesting and timely. In acute disease urgent symptoms demand radical treatment, but these cases are fortunately rare. Chronic suppuration is practically always associated with suppurative in some of the neighboring cavities. A radical operation is indicated in the following conditions: Chronic suppurative frontal sinusitis accompanied by multiple polyp formation in the nose, associated with ethmoiditis, if the patient desires to be permanently rid of the disease. In severe acute exacerbations of the chronic condition. If intranasal treatment does not suffice to prevent the discharge from passing into the antrum and the odor and taste of the fetid discharge from the latter annoy the patient, then, in order to cure the antrum, the frontal must be operated upon radically. Very large frontal sinuses with multiple septa, and particularly those with recesses extending backwards over the roof of the orbit, can be but imperfectly irrigated. Until recently we have had no means of ascertaining these facts. Skiagraphy, however, as now practiced will give us the exact height and breadth of the frontal sinus, indicate the number and position of the septa and in many cases inform us of the presence of an orbital recess. The radical operation should be advised for such patients. When the drainage is poor and headaches frequent, these patients generally submit to a radical operation. Intranasal treatment is slow and the results uncertain. A radical operation may take as long to effect a cure but this, when obtained, is permanent. The neurasthenic patient who is prostrated each time intranasal treatment is attempted, and rarely submits to enough being done at one time to make much progress, is more satisfactorily treated by the radical method. If a fistula has formed leading into a frontal sinus a radical operation is the only treatment likely to effect a cure.

The Ogston-Luc operation consists in opening the anterior wall of the sinus, imperfectly curetting the mucous membrane, dilating the naso-frontal duct, usually inserting a rubber drainage tube through the latter into the nose for a few days, sewing up the frontal wound and trusting that the better nasal drainage will eventually result in establishing a cure. Kuhnt removed the entire anterior wall of the frontal sinus, eviscerated the entire mucous membrane in the cavity, naso-frontal duct and adjacent ethmoidal cells, sewed up the skin wound and placed drainage from the bottom of the wound into the nose.

Coakley's experience with the mastoid led him to believe that it might be possible to treat a frontal sinus like a mastoid, *i. e.*, to operate in the

manner of Kuhnt but to pack the frontal sinus and naso-frontal duct so that the granulations would spring up and first occlude the narrowest part of the cavity, the bottom of the naso-frontal duct. This having been accomplished the condition would be the same as in the mastoid wound after the closure by granulations of the aditus and antrum, and it would be merely a matter of time for the upper part of the frontal sinus to fill with granulations and become completely obliterated. There is, of course, some deformity depending on the size of the cavity. If the operation is properly done there is no greater danger of recurrence than in a mastoid. He has operated upon more than a hundred cases by this method and has found the results very satisfactory.

(To be continued.)

Reports of Societies.

THE MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

STATED MEETING, DEC. 11, 1905.

SYMPOSIUM ON PNEUMONIA.

The introductory was made by the President, DR. T. E. SATTERTHWAITE, who said in part: "Inquiring into the cause of the disease, have we one, or several, etiological factors? Other questions that suggest themselves are, What is the relation borne by pneumonia to occupation, the season of the year, age and social conditions? Even in plain lobar pneumonia have we discovered that there is but a single infecting agent? Another question is as to the limitation of the disease. Is it self-limited, and, if not, what are the remedial agencies which are specially applicable to the different forms of the affection? How much may we expect from massive doses of mercurials, the application of heat or cold, inhalations, quinine, salicylates or creosote, etc.?"

DR. J. M. ANDERS of Philadelphia read a paper on

THE PROPHYLAXIS OF LOBAR PNEUMONIA.

Although, he said, the natural methods of diffusion of the pneumococcus are imperfectly known, the report of the Medical Commission for the Investigation of Acute Respiratory Diseases of the Health Department of New York contains the results of investigations which tend to throw fresh light on this important problem. Until the present, purely empirical prophylactic measures have been for the most part advised and more or less generally employed. The results of experimental studies on the pneumococcus, carried out under the direction of Drs. William H. Park and A. W. Williams, have confirmed the opinion previously held by most authors that pneumonia should be considered to a certain degree as contagious. Another fact indicated by these researches is that the virulence of the pneumococcus may be rapidly increased for a susceptible species of experimental animal by successive passage. It is generally believed that the principal source of the causative organism is the sputum of pneumonia patients, but since the virulence of the pneumococcus may be quickly increased, as shown by the investigations of Park and Williams, and since the organism is quite prevalent in normal sputum, the latter source must also be reckoned with in considering measures of prophylaxis. It is gratify-

⁹ Laryngoscope, August, 1905.

ing to observe that the Commissioner of Health of New York has issued a drastic edict against spitting on the sidewalks, and that already a decrease in the number of cases of pulmonary tuberculosis has been noted in certain districts in which the law has been enforced. What is true of consumption applies with equal force to lobar pneumonia, since the itinerant cases of the former find their counterpart in well persons, or those suffering from catarrhal conditions of the respiratory tract, who harbor the pneumococcus. The conclusions arrived at in the paper were as follows:

(1) Certain degenerative lesions, especially of the cardio-vascular system and the kidneys, have shown an increased incidence during the last two decades, and these are found to be associated or antecedent conditions in many cases of pneumonia; hence are probably potent predisposing factors. (2) The indoor conditions during the cold season favor multiplication and propagation of the pneumococcus, and at the same time tend to diminish resistance to infection by the specific organism. (3) The aged are peculiarly susceptible to pneumococcus infection; hence their bodies should be kept as strong and healthy as possible, especially during the pneumonia season. (4) To overcome the predominating factors in individual predisposition, special attention must be paid to the subject of ventilation, to appropriate clothing, and to the avoidance of agencies which cause degeneration of the heart, vascular system and kidneys, as alcohol, social excesses, an over-strenuous business or professional life and the like. (5) The sputum is the principal source of infection, and should be thoroughly disinfected as soon as expectorated, and then destroyed by burning. Public expectoration should be restricted in every possible manner. (6) A large proportion of the general populace harbors the pneumococcus in the naso-pharynx, and this is especially true in families and institutions in which cases of pneumonia have occurred. Hence thorough cleanliness and disinfection of these chambers should be carried out during the pneumonia season, and more particularly in the case of persons more or less exposed to the virus of the disease. (7) Means to prevent dust from accumulating and its daily removal from the home and the city streets are imperatively demanded. (8) Public health authorities should be given full executive power to carry out rules and regulations relative to pneumonia, looking to the prevention of its spread, as in the case of other infections and contagious diseases. They should also carry on a campaign of public education. (9) Measures of prophylaxis must accord with intelligent public opinion before they can be rendered wholly efficient either by municipal or private authority.

DR. R. W. WILCOX spoke on

SOME QUESTIONS IN DIAGNOSIS.

After alluding to certain points which might lead to the recognition of the disease before the characteristic physical signs were developed, he said that fortunately in many atypical cases, modern methods had enabled us to differentiate pneumonia from other diseases. Thus, when a case had extended beyond the regular period of pneumonia, and the question arose whether typhoid fever might not be present, the use of the Widal reaction would usually determine the matter. During epidemics of cerebro-spinal meningitis there were certain cases in which the disease seemed to spend its force on the lungs. Here the examination of the fluid removed by lumbar puncture would show the true nature of the affection present.

DR. H. P. LOOMIS read a paper on

THE PRESENT TREATMENT OF PNEUMONIA AS EXEMPLIFIED BY THE ROUTINE TREATMENT OF THE DISEASE IN FOUR OF THE LARGE NEW YORK HOSPITALS.

The four hospitals are Bellevue, Roosevelt, the New York and the Presbyterian. In all of them calomel, usually in small, repeated doses and followed by a saline is given the patient on admission, and the calomel is repeated during the course of the disease, if necessary. Local applications to the chest are made only when the pain and distress are intense. In the New York and Bellevue ice poultices are sometimes used. During the height of the disease milk is given exclusively or as the principal article of diet, and at Roosevelt patients are urged to drink water largely. The treatment of fever varies more than anything else, although a temperature of 104 or over is not necessarily regarded as an indication for special treatment. Cold packs to the anterior portion of the chest, tepid sponges and alcohol sponges are variously used. Tub baths are never given at Bellevue or Roosevelt; at the New York, very seldom; and at the Presbyterian, only in alcoholic cases with nervous symptoms. Codeine and heroine are the principal drugs employed to control cough, and trianol, veronal and codeine for insomnia. Pulmonary edema is treated by cupping and hypodermic injections of adrenalin or atropine, together with increased stimulation. Oxygen is not given as much as formerly in any of the hospitals. The three cardiac stimulants which are used in all are alcohol, strychnine and digitalis. At the Presbyterian Hospital alcohol is employed less generally than formerly; in the other three quite as much as it was two or three years ago. Nitroglycerin is used only very occasionally. During the past year or so a number of drugs have been tried and discarded, as potassium iodide, salicylates and pneumococcus serum. Creosote is still sometimes given, especially at Roosevelt and the Presbyterian, but the staff of these hospitals state that they can see no results from its use. At Roosevelt saline injections into the rectum are employed, especially in alcoholic cases and those where nutrition is failing.

DR. HOWARD A. HAIN of Philadelphia read a paper on

THE TREATMENT OF PNEUMONIA.

In it he especially urged that remedies be administered only when very definite and clear indications for their use were present. In many instances, spurred on by the anxiety of friends, the physician is inclined to give medicines continually throughout the entire course of an attack of croupous pneumonia, forgetting that remedies which are powerful enough to do good may, under certain circumstances, be powerful enough to do harm. Further, it must be recognized that our means of treatment cannot be curative, and should be directed simply to the support of the system, and the regulation of its functions, until the disease has run its course. In many instances rapidly-acting, but fleeting, circulatory stimulants, such as Hoffmann's anodyne and aromatic spirit of ammonia, are all that are needed to bridge over temporary periods of depression. These remedies are not advantageous when used for a long period of time, as they lose their effects and are apt to disorder the stomach. If digitalis is employed, it should always be in the form of a preparation which has been physiologically tested, since other specimens of digitalis often vary greatly in their pharmacological activity. Of the remedies which are best for the combating of collapse and circulatory failure, strychnine and atropine undoubtedly rank highest, the atropine being particularly valuable in those cases in which

there is a gaseous pulse with relaxed blood vessels. Digitalis often fails because the heart muscle has undergone degeneration as a result of the toxemia, or because the high temperature of the disease prevents it from exercising its physiological properties. Mild alkaline diuretics, for the purpose of flushing the kidneys, are useful, and hypodermoclysis may at times be a valuable resource. In conclusion, the author once more urged upon his hearers the necessity of avoiding medication except in the presence of very direct indications for the use of certain drugs. But, on the other hand, he advocated the free administration of remedies which were indicated to meet special conditions arising in the course of the disease. While, on the one hand, we must not be too active, it is an equally great mistake to be unduly passive in the presence of such a grave illness. Nitroglycerin, often used in pneumonia as a cardiac stimulant, is always abused under such circumstances, since it is a circulatory relaxant, and never active as a true stimulant. This is a point overlooked by many members of the profession. The only indication for the employment of nitroglycerin in pneumonia is when the arterial tension is unduly high, and the heart is consequently called upon to do an excessive amount of work.

DR. J. MADISON TAYLOR of Philadelphia read a paper on

THE ROLE OF SALINE SOLUTIONS IN THE TREATMENT OF PNEUMONIA.

He presented a *résumé* of the facts relating to the disposition of the normal salts of the blood plasma and its contained autoprotective potentialities, a recognition and use of which is capable of furnishing a beneficial agency in overcoming infectious processes. A few observers have called attention to the value of saline solution designed to supply the enormous loss in these essential constituents of the plasma which occurs during febrile states. These, however, have recommended the use of the measure only late in the disorder and in desperate cases. Dr. Taylor urged the extreme importance of following the advice of Sajous to employ it as soon as the character of the disease is recognized, in order to insure the full efficiency of the blood's antibodies, *i. e.*, the body's autoprotective powers. Saline solution, used early, preserves the blood's normal fluidity, renders normal osmosis possible, and gives free sway to the immunizing process. He believes that to delay in the use of salines is just as dangerous as to delay administering antitoxin in a case of diphtheria, and, moreover, that in infections the blood suffers such rapid depletion of saline elements (the effect of which is to impair the efficiency and finally arrest the protective functions of the organism) that this constitutes one of the most active causes of death. His practical recommendation was to begin at the outset, in pneumonia and other infectious fevers, the internal use of saline solution, especially containing sodium chloride and the other saline constituents of the blood. The use of these salines by hypodermoclysis or enteroclysis has been recently shown by a number of observers, acting upon Sajous' recommendation, to be of great efficiency when begun early. The employment of the saline drink has been shown by Todd and by Dr. Taylor to be of equal efficiency and not at all inconvenient or disagreeable. A lemonade, each glassful (6 to 8 oz.) of which contains 10 gr. of sodium chloride and 5 gr. of potassium carbonate, with a teaspoonful of lemon juice, is given every two hours to adults. The suggestion, he claimed, is based upon so much of reasonableness and simplicity that it is to be recommended that physicians should give this measure a fair trial.

The discussion was participated in by Drs. A. H. Smith, W. H. Thomson, Beverly Robinson and G. B. Fowler.

THE SIGNIFICANCE IN PNEUMONIA OF THE ANATOMICAL CHARACTERISTICS OF THE LUNGS.

DR. A. H. SMITH said that in pneumonia the proportion of toxin in the exudate increases until the latter becomes unfitted to act longer as a culture medium, when the further growth of the parasite in that immediate locality will cease. Meanwhile the presence of the exudate, aided by the coagulating effect of the toxin, will have brought about arrest of circulation in the capillaries derived from the pulmonary artery, and the function of the part will be completely suspended. So long as fresh areas of lung are being invaded, so long will the systemic disturbance continue; but when the formation of toxin in the zone last invaded has ceased, there will be a cessation of the general toxic phenomena and a fall of temperature, marking the crisis. The local conditions in developed pneumonia are such that gangrene would be inevitable were it not that the nutrition of the lung is maintained by a circulation distinct from that by which the function is carried on. While the capillaries derived from the pulmonary arteries are completely occluded for many days in the affected part, the bronchial arteries are scarcely implicated, and the nutrition remains intact. In pneumonia, Dr. Smith said, the significance of this double circulation was overlooked until he drew attention to it in the early nineties, and even now is very generally ignored. So, too, the difference between the columnar epithelium of the tubes and the pavement epithelium of the air cells, in relation to the growth of the pneumococcus, is a factor of transcendent importance in the concept of pneumonia, since this makes it clear how it is possible to have pneumonia ever present potentially, and yet continue to escape it actually. As to what constitutes pneumonia, he would contend that a single pneumococcus lodged in an air cell, and causing there its specific irritation and consequent exudation, presents all the essentials of the disease. It matters not, he said, if ten minutes later the organism is swept away by the exudate; the patient will have had a pneumonia, if only a monococcal one. Or if later the bronchiole terminating in the lobule first invaded becomes blocked, and the further spread of the infection is prevented, the patient may escape with a unilobular pneumonia; but he will have had a pneumonia all the same. Indeed, there is reason to suspect that such abortive attacks are very common. What, then, he asked, becomes of the notion that the disease is at first general, becoming localized afterward?

HIGH MORTALITY IN HOSPITAL CASES.

DR. W. H. THOMSON read a short paper on the "Pathology of Chill," the concluding paragraph of which was as follows: "Our bacterial enemies, therefore, are always ready to find some injured place in us, and the damage of a small internal locality caused by the reflex action of the vasomotor irritant, cold, on the surface is undoubtedly often the first step in a serious infection from such a foe as the pneumococcus, which may have been waiting for weeks or months in the mouth, unable to do any mischief until an entrance was made for it by 'catching cold.'" He then went on to speak of the greater mortality from pneumonia in hospital patients as compared with those in private practice. The carrying of a patient in the active stage of the disease, perhaps one or two miles through the streets, to the hospital was itself a source of the gravest danger. Absolute rest in the recumbent posture was an essential in the successful management of pneu-

monia, and he always forbade his house staff to raise a patient for the purpose of examining the chest. In bad epidemics it was not uncommon for patients to die within two hours after admission. In the fatality of pneumonia, as of cerebrospinal meningitis and other diseases, the stage of the epidemic at which the case occurred was an important factor. A fatal result, he had observed, was much less likely to occur when the epidemic was declining than when on the increase or at its height. Fifty years ago he was a student at Glasgow when Hughes Bennett was condemning venesection. He remembered that he lost only one out of twenty-three pneumonia patients, and they were treated with potassium acetate and sweet spirit of nitre. His own opinion was that our present treatment of pneumonia was not as successful in its results as that of fifty years ago. Whatever else we might be doing, it was very evident that we were not giving the antidote to the disease. The true antidote had yet to be discovered.

THE VALUE OF ALCOHOL AND CREOSOTE.

DR. BEVERLEY ROBINSON did not think hospital statistics were of great value. The most useful knowledge and experience, he said, could be obtained in private practice. It was difficult for the hospital physician to individualize his cases, and patients were often in an almost hopeless condition when admitted. As to the matter of stimulants, he believed that nothing was half as valuable as good old brandy. Under certain conditions it was the very best remedy that could be employed. If alcohol were used at all, the preparation should be of the best quality. In any case where an attack of pneumonia was threatened it was his practice to start a croup kettle, using in the solution employed for evaporation a certain proportion of the best beechwood creosote. He knew of no remedy which could approximate it in value when given thus by inhalation. He certainly would not regard it as a specific, but he believed that it was sometimes a great help, just as alcohol was, or as digitalis was. As to the remedy or remedies to be employed, everything depended upon the conditions existing in the particular case.

THE USE OF MINUTE DOSES OF MORPHINE.

DR. G. B. FOWLER said that in ordinary cases he used practically no medication, his aim being simply to make the patient as comfortable as possible. When there was pain or restlessness he considered very small doses of morphine of special value, giving 1-40 gr. as often as necessary. In cases where the conditions demanded their use, he gave alcohol, strychnine and sometimes digitalis. There was no specific in this disease, and in his treatment he simply carried out those measures which his own experience had shown him to be the most satisfactory.

DR. ANDERS said that degenerations of the heart and kidneys were often observed at the post-mortems of pneumonia cases. At such autopsies at the Philadelphia Hospital he had found that there was a large percentage of interstitial nephritis. As to the importance of absolute rest, he believed there was no other disease in which this was so essential to the welfare of the patient, and he did not allow his own patients even to turn in bed without the assistance of an attendant. Pneumonia was a toxemia, and we should deal with it like other toxemias. Elimination should always be aimed at, through the kidneys, the bowels and the skin. The kidneys were the great eliminating channels, and water, given freely in the intervals between the times of feeding, was a useful diuretic. He was also in the habit of employing tepid sponging, not for the purpose

of reducing temperature, but to promote elimination through the skin. In sthenic cases, particularly in country patients, he would urge the advisability of venesection, followed by saline infusion. These measures were likewise of service in cases attended with edema and in several instances of this kind he had been much gratified with the success attending them.

Recent Literature.

The Practitioner's Visiting List, 1906. Philadelphia and New York: Lea Brothers & Co.

This takes the place of the old Medical News Visiting List. The name is changed, but the list presents the familiar and useful features of its predecessor with the moderate revision required to bring it up to date.

The Physician's Visiting List for 1906. Philadelphia: P. Blakiston's Son & Co.

The Medical Record Visiting List or Physician's Diary for 1906. New York: William Wood & Co.

Blakiston's Physician's Visiting List for 1906 marks the fifty-fifth year of its publication. The general character of the booklet is essentially unchanged. It contains the usual facts of interest and undoubtedly will continue to fill the place it has made for itself.

A certain revision of the Medical Record Visiting List had been made in that the lists of remedies and their maximum doses have been altered to meet the changes which have been made, and such as are official in the United States are indicated. Information useful in emergencies has been increased, and other matter usually found in a physician's library has been eliminated. A useful obstetrical calendar is inserted at the beginning of the book.

Both are bound in flexible leather and are of convenient pocket size.

The Microtome's Vade-Mecum. A Handbook of the Methods of Microscopic Anatomy. By ARTHUR BOLLES LEE. Sixth edition. pp. 358. Philadelphia: P. Blakiston's Son & Co. 1905.

Six editions of this widely used book on microscopic methods have appeared since 1885. The author has succeeded in this last edition in maintaining essentially the number of pages of the preceding edition. This has been accomplished by a rigid condensation of the text and certain rearrangements. The nervous system has received particular attention in the new edition, and neurofibril and neuroglia methods are given due attention. Mallory is not given credit for being essentially the co-discoverer of the elaborate Weigert method of staining neuroglia although his work is mentioned in connection with the description of the Weigert method. The book is excellently arranged and remains one of the valuable works on technique. The experience which the author has had through the preparation of six editions naturally has assisted in the elimination of unnecessary details.

Neurotic Disorders of Childhood: Including a Study of Auto- and Intestinal Intoxications. Chronic Anemia, Fever, Eclampsia, Epilepsy, Migraine, Chorea, Hysteria, Asthma, etc. By B. K. RACHFORD, M.D. Svo. pp. 440. New York: E. B. Treat & Co. 1905.

Some of the earlier chapters of this volume appeared a year or two ago in the *Archives of Pediatrics*, and form the nucleus and most of the first part of the present book. The scope of the work differs from that of the ordinary treatise on nervous diseases in childhood. It makes no claim to be a treatise of that sort, but instead it deals with certain of the neuroses as well as with certain syndromes of a neurotic character, or with a neurotic basis, such as recurrent vomiting, recurrent coryza, asthma, fever, nystagmus, pica and the like, which are usually neglected in the ordinary treatises. The so-called organic diseases of the nervous system are not considered. Especial stress is laid upon the importance of toxic conditions in the genesis of many of these disorders. The author's study of the kinship of recurrent vomiting, recurrent coryza, toxic epilepsy and migraine is of especial interest. The chapters on the more familiar neuroses, such as epilepsy and hysteria are practical and clear, but betray a lack of familiarity with the affections from the neurological standpoint. The book is of decided value as a practical treatise, dealing with various affections and syndromes, for a consideration of some of which the student would search the more systematic textbooks in vain.

Anatomy. Descriptive and Surgical. By HENRY GRAY, F.R.S. Edited by T. PICKERING PICK, F.R.C.S., and ROBERT HOWDEN, M.A., M.B., C.M. New American edition, thoroughly revised and re-edited with additions by JOHN CHALMERS DaCOSTA, M.D. Illustrated. Philadelphia and New York: Lea Brothers & Co. 1905.

It is a work of supererogation to review at length a book which has won such a place for itself as Gray's Anatomy. The present volume represents a new American edition from the fifteenth English edition with the revision of Dr. J. Chalmers DaCosta. The subject of descriptive anatomy changes far less than many other branches of medicine from year to year. Improvements are, however, continually being made in presentation, and particularly in the illustration of anatomical facts. This edition provides about five hundred new illustrations, a remarkable showing in view of the fact that the entire volume contains hardly more than twice this number. Many of the other standard textbooks of anatomy have been utilized in finally preparing this edition for the press. An innovation is the use of the new or international nomenclature in parentheses following the currently used terms. This plan is a good one inasmuch as it not only avoids a high degree of confusion, but also tends to introduce in a rational fashion the newer terms. Two articles have been taken out of this edition, namely, those on his-

tology and embryology. This is significant of the progress of specialism, but is, we think, regrettable. However superficial such chapters may be, it is desirable that the student studying anatomy should never fail to realize that histology and embryology are integral parts of the subject. Résumés, however, of important embryological or histological matters have been retained. The book remains the same in general appearance and size as heretofore.

A Manual of Clinical Chemistry, Microscopy and Bacteriology. By DR. M. KLOPSLOCK and DR. A. KOWARSKY of Berlin. Translated by THEW WRIGHT, M.D. New York: Rebman Company. 1905.

This book is the result of the authors' desire to place before their students in convenient and concise form the best methods for daily use in clinical chemistry, microscopy and bacteriology. The editor's translation deserves to find the same favor that the original work has received in Germany. The book contains a large amount of information in a surprisingly small compass. We have examined it with care and commend it highly to practitioners and students. Nearly all the most approved methods in laboratory diagnosis will be found in it, and some of the sections are distinctly better than those in most of the standard works on laboratory diagnosis. The chapter on the examination of the feces is one of the best guides to the clinical study of the subject in English. Other admirable sections are those on the sputum, gastric contents and urine. The poorest portion of the work is that devoted to the consideration of the blood. The authors, however, realize the value of Sahli's hemoglobinometer and the untrustworthiness of the Talquist method. The importance of chemistry in laboratory diagnosis is recognized throughout the volume and the chemical aspects are well presented.

Baby Incubators. A Clinical Study of Premature Infants with Especial Reference to Incubator Institutions Conducted for Show Purposes. By JOHN ZAHORSKY, A.B., M.D., Clinical Professor of Pediatrics, Medical Department, Washington University, St. Louis, Mo. Illustrated, 136 pages. St. Louis, Mo.: The Courier of Medicine Company. 1905.

In this little book Dr. Zahorsky gives his experiences in the care of the babies in the Incubator Building at the Louisiana Purchase Exposition at St. Louis. He not only describes the incubators and the care of the babies, but also draws many valuable conclusions both from their defects and their advantages. He also made a careful study of the caloric needs, temperature, nutrition and infections in these babies and gives his results in detail. The book is well worth study and cannot fail to be of much interest to those who have to deal with premature infants.

THE BOSTON

Medical and Surgical Journal.

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REPORT OF THE MASSACHUSETTS HOSPITAL FOR EPILEPTICS.

THE progress in the care and treatment of epileptics is reflected each year in the annual reports. The time is rapidly approaching when the work done, and tabulated in these reports, will form a mass of data from which valuable and far-reaching deductions may be drawn. We have before us the report of the Massachusetts Hospital for Epileptics for the official year ending Sept. 30, 1905. The trustees' statement, written by Dr. William N. Ballard, Chairman of the Board, makes mention of the increase in the number of patients and the facilities for their care. An additional assistant physician has been appointed, which makes four in addition to the superintendent who has general charge of the medical work. On Sept. 30, 1904, the institution accommodated 459 patients. One year later there were 521 patients, which unfortunately has led to the necessity of providing floor beds, particularly in the male wards. It is, however, expected that this overcrowding will be relieved by the opening of a new building for men in the spring. As we have repeatedly had occasion to remark, while unfortunate from the point of view of hospital management, overcrowding is the natural consequence of the success of an institution, and must be continually met by increased accommodations. The erection of a new building for men has been rendered possible by the appropriation of \$80,000. In design the building is to be made up of many single rooms for the accommodation of noisy and troublesome patients. This building, however, will not be sufficient to meet the full demands of the situation,

and the Board of Trustees has decided to ask for a similar sum for the erection of a building for women. The hospital at present provides a three years' training course for nurses, and male attendants are also allowed a certificate for work accomplished. The report of Dr. Everett Flood brings out both what the hospital is accomplishing and also its needs for the future, if its usefulness is to increase. One of the most difficult problems facing the management is in keeping the patients cheerful and suitably employed. Discontent is, however, not a conspicuous feature, and when it does occur is rather the result of early training than of dissatisfaction with the surroundings. We are glad to note that medical work is being systematized and the results disseminated. The custom of staff consultations and daily clinics, which have proved so successful and stimulating in many of our insane hospitals, has been adopted. A statement of the articles written, the autopsies performed, and other branches of the medical work, is given in tabular form. It is unnecessary to again call attention to the need of a generous support for this institution, which, in the comparatively short period of its existence, has become firmly established as one of the best equipped and managed hospitals for this type of patients in this country.

A DAY OF REST FOR PHYSICIANS.

ACCORDING to a cable despatch to the New York Sun, an interesting experiment is about to be adopted in Frankfurt by means of which physicians may have one day of rest in seven. Attention is called to the fact that since the general closing of shops and offices on Sunday went into effect some fifteen years ago, definite advantages have resulted to the people at large. Those classes which do not come strictly under the law of Sunday closing, such as pharmacists, have recently planned by mutual agreement for a partial closing of their places of business on Sunday. The movement has apparently met with the approbation of physicians, and the matter has recently been discussed at a meeting of the Frankfurt Medical Society. It was pointed out that general practitioners are rarely able to leave their professional work even for a day, and it was suggested that the city be mapped out into districts and that the doctors could then arrange with one another in such a way that a definite force might be left at home on Sunday, while the others go into the country care-free. One specialist also for every department of medicine

was to remain at home serving for the whole town. The proposition as finally decided upon is said to have received the unanimous approval of the physicians, and it is proposed to adopt the scheme Jan. 14.

It will be generally recognized that practising physicians, of all classes in the community, have the least free time. Any plan which will permit a change in this regard is certainly to be looked upon with favor, however difficult it may be of accomplishment. We are, however, inclined to think that the plan, as outlined above, will hardly succeed in practice so well as on paper. The public, unfortunately, is to be considered, and we take it that the seriously ill would be unwilling even for a day to part with the ministrations of their own physicians. Nor is it likely that the physicians themselves, under such circumstances, would willingly leave their patients to the care of another, however competent he might be. Finally, even could all such matters be satisfactorily arranged, we question whether a holiday under these circumstances could bring with it the full measure of recreation and enjoyment for which it was designed. A simpler method of recreation for the medical man, and one which is apparently being increasingly adopted, is to leave professional work for a week or a month at a time at such seasons as may be most available. One day in seven is far more difficult of accomplishment, at least in this country, than one month in twelve, although naturally there may be exceptions to this general rule. No doubt, however, conditions are somewhat different in Germany, where methods of enjoyment are simpler and recreation not so laborious an undertaking as here. In any case, we wish the Frankfort physicians success in their somewhat unique plan.

THE HENRY JACKSON FUND.

THE Hon. Robert Bacon, formerly a partner in the firm of Messrs. J. P. Morgan & Co., and one who had already rendered valuable assistance in raising money for the new buildings of the Harvard Medical School, has recently presented to the corporation of Harvard University the sum of \$85,000. The gift was accompanied by the following letter stating the purpose of the donor:

TO THE PRESIDENT AND FELLOWS OF HARVARD COLLEGE.

Gentlemen: It is my wish in adding to the funds now being raised for the benefit of the Harvard Medical School to express not only my interest in this object,

but also, and especially, my affection and esteem for my classmate and friend, Dr. Henry Jackson of Boston, now one of its teachers.

It would give me great satisfaction to realize that this gift should serve to promote those objects in which he is directly interested and could permanently identify his name with the future of the Medical School. Knowing his interest in medical research and the advancement of medical science, and also the eminent services of his father, the late Dr. J. B. S. Jackson, to this school, especially in connection with the Anatomical Museum, it is my desire to increase my original subscription of \$25,000 to the sum of \$85,000—to be known as the Henry Jackson Endowment Fund. The income of this is to be used for providing a suitable annual salary for the Curator of said Museum, and for maintaining its efficiency, as an aid to medical and surgical education and research in such manner as shall be recommended from time to time by the Faculty of the Harvard Medical School.

Very truly yours,

ROBERT BACON.

In accepting this gift the Corporation voted: "That Mr. Bacon's generous and welcome gift be gratefully accepted on the terms stated in the foregoing letter.

"Voted, that the name of John Barnard Swett Jackson, curator of the Warren Anatomical Museum from 1847 to 1879, and its first curator, be given to the curatorship."

There is but one other instance in the list of benefactions to the University, in which a gift has been made in the name of a living teacher. That it has been most worthily bestowed in the present case will be the general verdict of the profession. The addition of the name of the late Dr. J. B. S. Jackson to the title of the curatorship of the Museum is a fitting recognition of his lifelong devotion and able services to the school, both as Professor of Morbid Anatomy and Curator of the Museum.

The new building which will contain the Museum is nearly completed and the collection, which is now one of the best in the country and is being more and more freely used, both for purposes of instruction and original investigation, will find a new home well suited for its future work.

A gift of this sort is peculiarly acceptable, not only to those connected with the Harvard Medical School, who will immediately benefit by it, but also to the larger circle of the profession for whom a great medical institution should stand as a source of the widest information. The expense of maintaining and increasing the resources of a museum of this character is naturally very

great and increases with the richness and variety of its collections. Mr. Bacon's liberal bequest will do much toward setting aside any anxiety on this score, and will unquestionably be far-reaching in its benefits to the entire medical profession.

THE PHILIPPINE JOURNAL OF SCIENCE.

The work which has been done in the Philippines, both in medicine and other departments of research, is hereafter to be represented by a special journal to be known as the *Philippine Journal of Science*. By recent act of the United States Philippine Commission the Bureau of Government Laboratories will be so far expanded that it will hereafter include the former Mining Bureau of the Philippine Government and the united institutions will be known as the Bureau of Science. Heretofore a publication has appeared under the title "Bulletins of the Bureau of Government Laboratories." The new journal is to succeed these bulletins. It will receive articles from persons connected with the government and also from any individuals who may have worthy work to present. In addition to matters relating strictly to medicine, researches on various biological subjects, on chemistry, and on mineralogy, geology and paleontology are to be published. It will at once be seen that a journal of this scope must appeal to a large circle of scientific readers, and will, no doubt, prove an accurate epitome of the large amount of scientific work which is now being assiduously done throughout the islands. The journal will be issued as material accumulates, but it is expected that it will appear approximately once a month.

It is certainly to the credit of American energy that a laboratory system has within the few years of American occupation been firmly established in the Philippine Islands. The difficulties to be overcome in the way of general apathy on the part of the people, the trying character of the climate and the inherent difficulty of the problems under consideration, render the progress which has been made most noteworthy. The further concentration of the general laboratory scheme which this journal foreshadows is unquestionably in the line of progress and certainly is to be regarded as one of the most creditable events connected with the American occupation.

MEDICAL NOTES.

OFFICERS OF THE NEW YORK NEUROLOGICAL SOCIETY. — At the annual meeting held on Jan. 2, 1906, the following officers were elected for

the ensuing year: President, Dr. Joseph Fraenkel; first vice-president, Dr. Adolf Meyer; second vice-president, Dr. J. Ramsay Hunt; recording secretary, Dr. Edwin G. Zabriskie; corresponding secretary, Dr. F. K. Hallock; treasurer, Dr. G. M. Hammond; councillors, Drs. M. Allen Starr, Charles L. Dana, Joseph Collins, J. Arthur Booth and William M. Leszynsky.

THE HARVEY SOCIETY. — The fifth lecture in the Harvey Society course will be given by Prof. W. H. Park at the New York Academy of Medicine on Saturday, Jan. 20, at 8.30 p.m., on the subject, "A Critical Study of Serum Therapy." All interested are invited to attend.

THE AMERICAN JOURNAL OF UROLOGY. — A new journal, to be known as the *American Journal of Urology*, is announced under the editorship of Dr. Charles Greene Cumston of Boston, and published under the auspices of the American Urological Association. As its name implies, the journal, which is to appear monthly, will be devoted to the pathology and treatment of the medical and surgical diseases of the genito-urinary system. The journal as it now appears in its second volume is so far changed in form as well as in management that it is practically a new publication.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, Jan. 10, 1906, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 43, scarlatina 32, typhoid fever 11, measles 153, tuberculosis 43, smallpox 0.

The death-rate of the reported deaths for the week ending Jan. 10, 1906, was 18.19.

BOSTON MORTALITY STATISTICS. — The total number of deaths reported to the Board of Health for the week ending Saturday, Jan. 6, 1906, was 234, against 220 the corresponding week of last year, showing a increase of 14 deaths and making the death-rate for the week 20.50. Of this number 122 were males and 112 were females, 231 were white and 3 colored; 125 were born in the United States, 103 in foreign countries and 6 unknown; 18 were of American parentage, 150 of foreign parentage and 30 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 38 cases and 2 deaths; scarlatina, 30 cases and 10 deaths; typhoid fever, 11 cases and 2 deaths; measles, 171 cases and 4 deaths; tuberculosis, 40 cases and 22 deaths; smallpox, no cases and no

deaths. The deaths from pneumonia were 40, whooping cough 4, heart disease 25, bronchitis 10 and marasmus 3. There were 8 deaths from violent causes. The number of children who died under one year was 42; the number under five years, 59. The number of persons who died over sixty years of age was 62. The deaths in public institutions were 74.

ATTENDANCE AT THE BOSTON TUBERCULOSIS EXHIBITION.—The attendance during the Boston tuberculosis exhibition, which ended Jan. 7, was 24,560. This is a larger number by 6,960 than attended the New York exhibition held a few weeks previously. This is an excellent showing, and no doubt demonstrates the value of wide publicity in a matter of this sort.

PRESIDENT ELIOT ON FOOTBALL.—The report of the President of Harvard College, now in print, but not yet published, is said to contain the most emphatic arraignment of the present game of football which has so far appeared; and in some statements it has not been gently dealt with.

APPOINTMENT OF DR. F. B. LUND.—As one of the latest official acts of Governor Douglas, Dr. Fred B. Lund of Boston has been appointed one of the Board of Trustees of the Medfield Insane Hospital in place of Mr. John G. Park who has recently died. It is eminently fitting that the medical profession should be represented on the boards of trustees of our public institutions.

BOSTON TUBERCULOSIS HOSPITAL.—Dr. Frederick I. Knight has recently expressed his opinion regarding the needs for the treatment of tuberculosis in Boston by urging the necessity for a hospital in the neighborhood of the city where advanced and for the most part hopeless cases may be cared for. For this type of case he thinks a well-built house or houses should be provided, and that such patients should by no means be exposed to the rigorous treatment to which incipient cases are now subjected. Provision for the incipient cases is made at Rutland and elsewhere, and is not so crying a need as a hospital for those in the more advanced stages of the disease. For those cases which are too advanced for Rutland, and yet have not reached the hopeless stage, shacks and buildings of cheaper construction might be erected.

NEW YORK.

BEQUEST TO ST. LUKE'S HOSPITAL.—By the will of the late Alice Hamilton the sum of \$3,000 is left to St. Luke's Hospital.

OFFICERS OF MEDICAL ASSOCIATION OF GREATER CITY OF NEW YORK.—At the annual meeting of the Medical Association of the Greater City of New York, which was held at the Academy of Medicine on Jan. 8, Dr. T. E. Satterthwaite was re-elected president, Dr. R. E. Van Gieson, vice-president; Dr. P. Brynberg Porter, recording secretary; Dr. J. Blake White, chairman for the Borough of Manhattan, and Dr. R. W. Wilcox, member of the Executive Council.

VITAL STATISTICS FOR 1905.—The vital statistics for the year 1905 are of a very satisfactory character. The total number of deaths in the city was 73,540, as against 78,060 in 1904; the death-rate being 18.25 per thousand of the estimated population, as against 20.10 in 1904. It is stated that this death-rate is the lowest but one ever recorded by the Bureau of Vital Statistics, while, notwithstanding the serious epidemic of cerebrospinal meningitis during the earlier portion of the year, the contagious disease rate is the lowest on record. The number of births reported was 103,852, as against 99,555 in 1904.

HEREDITY AND ENVIRONMENT.—After giving the subject three years of careful study, E. Fellows Jenkins, chief probation officer of the Children's Court, which was established in 1903, is convinced that environment is a far greater influence than heredity in determining a child's career. In the course of his report for 1905 this official says: "Perhaps the best proof of the contention that environment has the strongest influence on the development of character is found in the records of the New York Society for the Prevention of Cruelty to Children, which, during thirty years has investigated cases involving the social and moral welfare of over half a million children."

REPORT OF HEALTH DEPARTMENT.—The weekly reports of the Health Department show that during the month of December the mortality in the city represented an annual death-rate of 17.33, as against 16.42 in November and 18.77 in December, 1905. The corrected death-rate, excluding non-residents and infants under one week old, was 16.31. Among the few causes of death which showed a diminished fatality were Bright's disease and nephritis, the weekly average of deaths from which decreased from 121 in November to 117½ in December, scarlet fever, in which the weekly average decreased from 6.5 to 5.5 and pulmonary tuberculosis, in which the weekly average decreased from 167.5 to 164.5. Among the diseases which showed an increased

mortality were the following: The weekly average of deaths from whooping-cough increased from 3 to 4; from diphtheria and croup, from 26 to 36.75; from epidemic cerebrospinal meningitis, from 10 to 15.75; from acute bronchitis, from 27.75 to 31; from pneumonia, from 139 to 151.4; from bronchopneumonia, from 72.75 to 85.25; and from organic heart diseases, from 101.5 to 105.25. It is noticeable that while the death-rate from diarrheal diseases was about the same as in November, the number of deaths per week in the last fortnight of December was nearly double the mortality from this cause earlier in the month. This result, it would seem highly probable, was due to the improper and over-feeding of young children during the Christmas season.

APPROPRIATIONS.—At the last meeting of the year of the Board of Estimate and Apportionment, appropriations to the amount of \$291,000 were made for Bellevue and Allied Hospitals; \$244,000 to be used for the new additions and to purchase other hospital property, and \$50,000 for present needs. The Board also appropriated \$305,000 for the purchase of seven sites for children's playgrounds in the Borough of Brooklyn. The Controller of the State of New York reports that during the past year \$3,700,000 was paid for the care and treatment of the insane, and \$2,100,000 for charitable institutions other than the state hospitals. The total cost of maintenance of the sixteen charitable institutions under the jurisdiction of the Fiscal Supervisor exclusive of the state hospital for incipient pulmonary tuberculosis at Ray Brook, was \$1,438,161, as against \$1,431,984 in 1901.

Obituary.

PROFESSOR ALFRED SCHAPER.

PROF. ALFRED SCHAPER, whose death occurred a few months ago, is well remembered in this community by many friends and former pupils. He came to Boston in 1895 to take the position of Instructor of Histology and Embryology in the Harvard Medical School and began his work as a teacher in October of that year. For five years he remained connected with the school, and was promoted to the position of Assistant Professor of Histology and Embryology in 1899.

Professor Schaper was born May 25, 1863, in Braunschweig. His father held the position of Chief Marshal of the Grand Ducal Court and bore the title of Hofrath. After completing his studies at the gymnasium young Schaper went to the University of Greifswald, where he remained for two years, and then went to Munich for three years, taking his degree at the state

examination in January, 1889. He had first thought of entering into practice, but that was entirely against his natural bent, and he soon turned to purely scientific work, having many of the natural gifts of the born naturalist, a fondness for out of doors, eagerness in seeking intimacy with living nature, an unceasing appetite for information, and a natural endowment for all forms of laboratory work. He had profited thoroughly by his university training, and became a master of embryological research, making his observations with care, not resting satisfied until they were really complete, and then applying them to establish conclusions of wider interest. His numerous published investigations testify alike to his industry and his ability. As a teacher, also, he won distinguished success, getting the confidence of the students and securing their esteem by his evident mastery of the subjects which he taught. He contributed in liberal measure to the development of scientific work at the Harvard Medical School, and exerted, while he was in this country, a very beneficial influence, especially upon the younger men connected with the school, and his retirement from our service was sincerely regretted by his many friends, who had learned to value and appreciate his gentle, modest and lovable character.

Upon leaving Boston he returned to Germany and received a call as Professor Extraordinary to the University of Breslau, taking the place of the late Professor Born, and, at the same time, Schaper was made the head of the Embryological Division of the Anatomical Institute, and First Professor under Professor Hasse.

Schaper's investigations were nearly all in the embryological field, where he had a secure mastery and appreciation of the general problems of vertebrate morphology. A number of his most important publications concern the structure and histogenesis of the nervous system. They all show that he was a conscientious and competent workman. While in America he edited an American edition of Stöhr's textbook on histology. This work was far superior to anything at that time available in the English language, and the publication went rapidly through several editions, being widely used throughout the country, and certainly contributed a great deal to the elevation of histology teaching in all our medical schools. At the time of his death Professor Schaper was working upon a new textbook of histology, the plan for which was formed before he left America, and which was to have as its special distinctive quality the presentation of the whole subject from the development point of view. This work, had it been completed, would, I think, have proved a real and inspiring innovation in histological science.

Professor Schaper married in 1896 an American lady, Miss Mary McPherson, whose acquaintance he had made in Zurich. She survives him.

Professor Schaper was a gifted and enterprising investigator with high aims. His memory will long be cherished by those who knew him in this country.

CHARLES S. MINOT.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, DEC. 30, 1905.

| CITIES. | Population. Census, 1905. | Reported deaths in each. | Deaths under five years. | Percentage of deaths from | | | | | |
|-----------------|------------------------------|-----------------------------|-----------------------------|---------------------------|-------------------------|--------------------------|-------------------|----------|-------|
| | | | | Infectious diseases. | Acute lung diseases. | Diphtheria and croup. | Typhoid fever. | Measles. | |
| New York . . | 1,391 | 371 | 25.00 | 21.13 | 2.73 | .83 | .86 | | |
| Chicago . . . | 525 | 127 | 24.60 | 13.52 | 2.47 | 2.67 | .57 | | |
| Philadelphia . | 491 | 134 | 27.63 | 14.46 | 1.62 | 2.85 | .21 | | |
| St. Louis . . . | — | — | — | — | — | — | — | — | — |
| Baltimore . . | 191 | 59 | 20.41 | 19.88 | 1.57 | .52 | .52 | | |
| Cleveland . . | — | — | — | — | — | — | — | — | — |
| Buffalo . . . | — | — | — | — | — | — | — | — | — |
| Pittsburg . . | — | — | — | — | — | — | — | — | — |
| Cincinnati . . | — | — | — | — | — | — | — | — | — |
| Milwaukee . . | — | — | — | — | — | — | — | — | — |
| Washington . | — | — | — | — | — | — | — | — | — |
| Providence . . | — | — | — | — | — | — | — | — | — |
| Boston . . . | 595,380 | 71 | 12 | 19.71 | 14.08 | 1.40 | 1.40 | — | — |
| Worcester . . | 128,135 | 40 | 16 | 12.50 | 5.00 | 2.50 | — | 1.83 | — |
| Fall River . . | 105,762 | 36 | 16 | 22.22 | 8.33 | — | 2.78 | — | 2.50 |
| Cambridge . . | 97,434 | 23 | 6 | 21.74 | 13.04 | — | — | — | — |
| Lowell . . . | 94,889 | 33 | 17 | 18.18 | 27.27 | 3.03 | 3.03 | — | — |
| Lynn | 77,042 | 20 | 3 | 20.00 | 10.00 | — | — | — | — |
| New Bedford . | 73,540 | 22 | 7 | 13.64 | 13.64 | 9.09 | 4.55 | — | — |
| Springfield . | 70,650 | 25 | 6 | 20.60 | 28.00 | 1.00 | — | — | — |
| Lawrence . . | 69,272 | 19 | 4 | 19.79 | — | — | — | — | — |
| Somerville . . | 49,534 | — | — | — | — | — | — | — | — |
| Holyoke . . . | 47,794 | 14 | 3 | 42.86 | — | — | 14.29 | — | — |
| Brookline . . | 38,037 | 18 | 2 | 11.11 | 5.56 | — | — | — | — |
| Malden . . . | 37,890 | 12 | 1 | 16.67 | 25.00 | 8.33 | — | — | — |
| Haverhill . . | 36,000 | 4 | 1 | 18.75 | 37.50 | — | — | — | — |
| Salon | 37,259 | 19 | 10 | 52.63 | — | — | — | — | — |
| Chelsea . . . | 36,827 | 10 | 4 | 10.00 | 10.00 | — | — | — | — |
| Newton . . . | 33,021 | 4 | 1 | — | 25.00 | — | — | — | — |
| Pitchburg . . | 30,967 | 5 | 1 | 20.00 | — | — | — | — | — |
| Taunton . . . | 29,111 | 2 | 2 | 12.50 | — | 12.50 | — | — | — |
| Everett . . . | 28,076 | 11 | 2 | 9.09 | 18.18 | 9.09 | — | — | — |
| Quincy . . . | 26,282 | 7 | 2 | 42.86 | — | — | — | — | — |
| Waltham . . . | 26,011 | 6 | 2 | — | 12.50 | — | — | — | — |
| Gloucester . . | 25,001 | 4 | 2 | — | — | — | — | — | — |
| Pittsford . . | 23,436 | 4 | 2 | — | — | — | — | — | — |
| Brookline . . | 22,150 | 5 | 1 | 12.50 | 12.50 | — | — | — | — |
| North Adams . | 20,191 | 8 | 1 | — | — | — | — | — | — |
| Chicopee . . . | 18,357 | 10 | 0 | 10.00 | — | — | — | — | — |
| Northampton . | 18,686 | 2 | 0 | — | — | — | — | — | — |
| Melrose . . . | 15,223 | 2 | 0 | 100.00 | — | — | — | — | — |
| Beverly . . . | 14,675 | 2 | 0 | — | — | — | — | — | — |
| Newburyport . | 14,510 | 2 | 0 | — | — | — | — | — | — |
| Hyde Park . . | 14,402 | 4 | 0 | — | — | — | — | — | — |
| Woburn . . . | 14,297 | 4 | 0 | — | — | — | — | — | — |
| Leominster . . | 14,295 | 2 | 0 | — | — | — | — | — | — |
| Melrose . . . | 14,073 | 4 | 0 | — | — | — | — | — | — |
| Marlboro . . . | 13,611 | 3 | 0 | — | — | — | — | — | — |
| Westfield . . | 13,105 | 4 | 0 | — | — | — | — | — | — |
| Clinton . . . | 13,058 | 4 | 0 | — | — | — | — | — | — |
| Pesquod . . . | 12,702 | 3 | 1 | 66.67 | — | — | — | — | — |
| Attleboro . . | 12,639 | 3 | 1 | 66.67 | — | — | — | — | — |
| Revere | 12,486 | 3 | 1 | — | — | — | — | — | 33.33 |
| Adams | 12,165 | 3 | 1 | — | — | — | — | — | — |
| Weymouth . . | 12,012 | 2 | 0 | — | — | — | — | — | — |
| Garner | 11,585 | 2 | 0 | — | — | — | — | — | — |
| Framingham . | 11,548 | 1 | 0 | — | — | — | — | — | — |
| Watertown . . | 11,258 | 1 | 0 | — | — | — | — | — | — |
| Plymouth . . | 11,119 | 7 | 3 | 57.14 | — | — | — | — | — |
| Southbridge . | 10,268 | 3 | 3 | 33.33 | — | — | — | — | — |
| Wakefield . . | 10,018 | 3 | 3 | — | — | — | — | — | — |
| Webster . . . | — | — | — | — | — | — | — | — | — |

Deaths reported, 3,320; under five years of age, 893; principal infectious diseases (smallpox, measles, cerebrospinal meningitis, diphtheria and croup, diarrheal diseases, whooping cough, erysipelas, fevers and consumption), 758; acute lung diseases 506, consumption 288, scarlet fever 19, whooping cough 13, cerebrospinal meningitis 69, smallpox 0, erysipelas 7, puerperal fever 7, measles 25, typhoid fever 43, diarrheal diseases 102, diphtheria and croup 78.

From whooping cough, New York 5, Chicago 2, Philadelphia 1, Baltimore 2, Fall River 2, Lowell 1. From scarlet fever, New York 6, Chicago 8, Philadelphia 1, Boston 2, Brockton 1, Waltham 1. From cerebrospinal meningitis, New York 63, Philadelphia 1, Boston 2, Worcester, Lowell and Lynn 1 each. From erysipelas, New York 4, Philadelphia 2, Providence 1, Boston 2. From typhoid fever, New York 7, Chicago 14, Philadelphia 14, Baltimore 1, Providence 1, Fall River, Lowell, Springfield and Beverly 1 each, Brockton 2. From measles, New York 12, Chicago 3, Philadelphia 3, Baltimore 1, Boston 4, Worcester 1, Revere 1. From diphtheria and croup, New York 38, Chicago 14, Philadelphia 8, Baltimore 3, Providence 1, Boston 2, New Bedford 3, Springfield 2, Worcester, Lowell, Lawrence, Haverhill, Newton, Everett and Quincy 1 each.

In the seventy-six great towns of England and Wales, with

an estimated population of 15,609,377, for the week ending Dec. 23, 1905, the death-rate was 17.8. Deaths reported 5,321; acute diseases of respiratory organs (London) 252, whooping cough 123, diphtheria 77, measles 124, smallpox 0, scarlet fever 51.

The death-rate ranged from 8.6 in Hastings to 28.8 in Preston; London 19.4, West Ham 12.7, Brighton 9.8, Southampton 18.2, Plymouth 16.2, Bristol 19.1, Birmingham 20.3, Leicester 17.8, Nottingham 13.5, Birkenhead 16.2, Liverpool 21.5, Wigan 19.3, Bolton 13.2, Manchester 21.0, Salford 15.1, Halifax 15.9, Bradford 12.7, Leeds 16.9, Hull 20.2, Sheffield 15.5, Newcastle-on-Tyne 15.0, Cardiff 14.5, Rhondda 14.2, Merthyr Tydfil 19.1, Kings Norton 12.7.

METEOROLOGICAL RECORD.

For the week ending Dec. 30, in Boston, according to observations furnished by Sergeant J. W. Smith of the United States Signal Corps:

| DATE | Barometer. | Thermometer. | | Relative humidity. | | Direction of wind. | | Velocity of wind. | | Wet'n'r | | Rainfall in inches. | | |
|-------------|-------------|--------------|----------|--------------------|-----------|--------------------|-------------|-------------------|-----------|-----------|-----------|---------------------|-----|-----|
| | Daily mean. | Daily mean. | Maximum. | Minimum. | 8.00 A.M. | 8.00 P.M. | Daily mean. | 8.00 A.M. | 8.00 P.M. | 8.00 A.M. | 8.00 P.M. | | | |
| | | | | | | | | | | | | | | |
| S. 24 29.84 | 33 | 38 | 28 | 66 | 51 | 58 | W | W | 12 | 12 | C. | C. | .01 | |
| M. 25 30.61 | 30 | 37 | 24 | 67 | 55 | 61 | 8 | W | W | 12 | 7 | C. | C. | 0 |
| T. 26 30.06 | 34 | 41 | 35 | 82 | 54 | 68 | W | W | 12 | 16 | O. | C. | 0 | |
| W. 27 30.07 | 42 | 51 | 32 | 63 | 55 | 59 | 8 | W | W | 10 | 12 | O. | C. | 0 |
| T. 28 30.26 | 46 | 55 | 36 | 63 | 56 | 58 | W | W | 10 | 8 | C. | C. | 0 | |
| F. 29 29.47 | 48 | 58 | 38 | 93 | 81 | 87 | 8 | E | W | 15 | 12 | R. | C. | .39 |
| S. 30 29.48 | 41 | 45 | 37 | 76 | 66 | 71 | 8 | W | W | 15 | 24 | F. | C. | 0 |
| 29 | 29.88 | 46 | 32 | 66 | | | | | | | | | | .40 |

*O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow; X., below zero. †Indicates trace of rainfall. ‡Means for the week.

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING JANUARY 6, 1906.

R. A. CAMPBELL, acting assistant surgeon. Appointed acting assistant surgeon from Jan. 9, 1906.

G. G. HART, acting assistant surgeon. Appointed acting assistant surgeon from Jan. 10, 1906.

W. H. BLOCK, acting assistant surgeon. Appointed acting assistant surgeon from Jan. 12, 1906.

C. G. HENDON, medical inspector. Having been examined by a retiring board, and found incapacitated for active service on account of disability incident thereto, is retired from active service, from Dec. 15, 1905, under provision of section 1453, Revised Statutes.

J. F. MURPHY, assistant surgeon. Ordered to the Naval recruiting station, Omaha, Neb., Jan. 24.

C. K. WISS, acting assistant surgeon. Detached from the naval recruiting station, Omaha, Neb., Jan. 24, and ordered to the naval hospital, Washington.

J. T. MILLER, acting assistant surgeon. Appointed acting assistant surgeon from Jan. 9, 1906.

L. O. SCHETRY, pharmacist. Appointed pharmacist Dec. 27, 1905.

SOCIETY NOTICES.

ANNUAL MEETING NEW ENGLAND HOSPITAL MEDICAL SOCIETY.—The annual meeting of the New England Hospital Medical Society will be held at Hotel Nottingham, Thursday, Jan. 18, 1906. Dinner will be served.

There will be a symposium of Medical Study and Travel Abroad, by Drs. Smith, Culbertson, Call, Palmer, Bond, Denig, Myrick, Mee, Haynes, Youngman, Nagle.

BLANCHE A. DENIG, M.D., Secretary.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.—The annual meeting of the society will be held at the Medical Library building on Monday, Jan. 15, 1906, at 8.15 P.M. Dr. James C. Marshall will read a paper entitled, "John Hunter." The annual business meeting will be held at 7 P.M. A full attendance of the members is desired.

ARTHUR K. STONE, M.D., Secretary.

Original Articles.

OPEN-AIR TREATMENT OF BONE TUBERCULOSIS AT THE WELLESLEY CONVALESCENT HOME: WITH A LIST OF THIRTY PERMANENTLY CURED CASES.*

BY B. H. BRADFORD, M.D., BOSTON.

THE efforts of the various societies devoted to controlling tuberculosis have been directed so actively towards combating phthisis pulmonalis, that the success of previous attempts and the present efforts in the treatment of bone and joint tuberculosis are in danger of not receiving the notice which they appear to merit. This is, perhaps, not strange as the individual suffering from consumption is often an active member of society and frequently very much in evidence. The Dame aux Camelias and Mimi, the heroine of the "Vie de Bohème," to say nothing of the hosts of untimely deaths of those of brilliant promise, may be said to have advertised consumption of the lungs, placing it more in evidence than is true of the disease of a fretful and deformed child who is kept as far as possible out of sight. And yet, not only does bone tuberculosis in children present equal demands on the sympathy of the community to those offered by pulmonary phthisis, but the beneficial effects of proper care are even more evident in the treatment of the former than the latter affection.

In our community, efforts for the country-air treatment for bone tuberculosis began many years ago, and, at present, the existing organizations that are attempting to meet the demands of an increasing immigrant pauper class can justly claim the continued and increased support from the charity workers and givers while the results which have already been gained furnish a sufficient guarantee for the quality of the work.

The first systematic attempt to combat what were considered the serofulous affections of the bone in our city, and, perhaps, in our country, was made by the late Miss Anne Robbins, who devoted the best years of her life to the founding, in Boston, and development of the House of the Good Samaritan, in 1865-70, containing a ward which was set apart for the especial care of children with Pott's disease and hip disease, she also later established a country home in the suburbs of Boston. Although this attempt in America was antedated by the work of an humble French woman who began in 1855 to care for, at the sea-shore home at Berck sur Mer, a few of the serofulous children of the city of Paris, and laid the foundation for a most beneficent and extensive institution, yet Miss Robbins is to be regarded as a pioneer in America, and the amount of good which she accomplished is perhaps comparable in meeting the needs of our community of that time with the work in France where an even greater need existed in the larger city of Paris.

Shortly after Miss Robbins had shown the advantage of the especial care of cases of bone tuberculosis, the Boston Children's Hospital was founded, and later a country convalescent home was opened in connection with that hospital, a number of charitable ladies under the leadership of Mrs. Robert C. Winthrop entering zealously into the work. The success of the Children's Hospital and its adjunct convalescent home in the treatment of bone tuberculosis has been greater than is generally known. Nearly ten thousand cases of tuberculosis of the bones and large joints in children have been observed, recorded and carefully treated in these institutions in the last thirty years. The experience gained amply demonstrates the curability of bone and joint tuberculosis as well as that these affections are greatly helped by the fresh air of the country, and that in a large number of cases at a certain stage where every other method has been attempted this treatment may give the stimulus that is most beneficial.

The methods employed in the surgical treatment of tuberculous hip and spine affections need not be described here as they appear in various publications and reports; but attention is directed to the recent improved methods introduced at the Wellesley Convalescent Home for the open-air treatment in bone tuberculosis by the Ladies Aid Association of the Children's Hospital, under the energetic leadership of Mrs. Oliver Peabody.

Taking advantage of the destruction, by fire, of the buildings of the former Convalescent Home three years ago, the managers of the Institution, following the suggestion of Dr. H. L. Barrrell, decided to treat convalescent cases of bone tuberculosis by the open-air treatment in place of what may be termed the country-air treatment formerly and generally employed. At present not only is the Institution arranged for the protection and care of children in a well-arranged country house, but a large number are placed in shacks with free opening to the outer air. Provision is made for only one hundred of these children, but with a comparatively small increase of outlay the Institution is capable of taking care of almost any number of tuberculous cases in children, both of bone and of lungs.

Experience seems to have taught those who have had the direction and care of these cases that in our climate and environment a situation on the interior, if well selected, is, on the whole, more useful during all the months of the year than a sea coast site. The seaside sanatoria in Europe and in our country have proven their usefulness, but it must be remembered that the sea coasts in Europe present a different climate from that which in the winter surrounds our bleak coast. The seaside sanatoria with us in New England are as a rule closed or need to be during the early autumn and winter and are chiefly used during the hot months of the summer. At Wellesley, however, cases are treated with the country treatment with benefit during the whole year, thus furnishing the proper tonic to the children,

*Read at the meeting of the Suffolk District Medical Society, Oct. 28, 1905.

when the severe storms of our coast during the winter period would make confinement in the house desirable, provided the institution had been placed in a more bleak situation.

The results of the open-air treatment furnished to these delicate children has been most gratifying and remarkable, as is shown by the notes and records that were taken by the surgeons in charge of the Convalescent Home, Drs. Dane and Thorndike and Drs. J. Adams and Lamb. The reports prepared by Dr. Adams and Dr. Lamb show that a marked increase in weight and in hemoglobin follow the change from the ward of the hospital to the open-air shacks of the Convalescent Home. The benefit in many instances is much greater than can be indicated by any chart or record, but the simple fact that an average gain of a pound a week followed the transference of a non-selected number of patients from the wards of a well appointed hospital to the open air of the Convalescent Home is something which is worthy of careful consideration. It will be remembered that the children in these instances were not taken directly from the slums or tenement houses, but had for many weeks received the best care and food in a well appointed hospital. They were then taken to the Convalescent Home and given the benefit of an open-air treatment, not simply during a few hours of the day, but both night and day. As most of these cases were chronic affections, the gain cannot be attributed to an arrest of the disease, but may be regarded as due to the fact that in one instance in the hospital ward they are surrounded by air which is not fresher than that which is to be found in the usual well appointed buildings, which is certainly much inferior to that given in tent life or its equivalent.

The experience gained at Wellesley corresponds to that of other observers elsewhere in the treatment of pulmonary tuberculosis, but the investigations at the Wellesley Convalescent Home are even more convincing than many others, for the reason that they are confined to cases of bone and joint tuberculosis, and in most instances to cases who have for some time previously received excellent care in good surroundings.

There remains in the minds of many a belief that even where an apparent cure has been gained, in the treatment of these affections on account of some underlying constitutional vice, the patient remains doomed to a life of disability, poor health or early death.

The following cases will serve to show the error of this opinion and that bone and joint tuberculosis is capable of a definite cure, permanent after the bone has cicatrized. Many of the following cases were treated for a time in hospitals. In the majority, however, the care was entirely at home, and in all the greater part of the treatment was home treatment.

CARIES OF SPINE.

D. Boy of five years, with upper dorsal caries, treated in a recumbent frame for eight months, followed by the application of an antero-posterior support with

head attachment. In the early stages the patient gave evidence of a relatively extensive process with pain, sharp knuckle, disability; two vertebrae were evidently involved. The treatment was continued with care for five years, the brace being worn constantly. The result was a definite cure. At the age of twenty-four the patient is strong and active with no noticeable projection, but showing in the bare back a flattening of the upper dorsal curve and an exaggerated compensatory lordosis. The patient has passed through his undergraduate courses at a leading university and has taken part in athletics and was in good health.



Case of cured hip disease, twelve years after cessation of treatment.

H. A girl of fourteen, with a sharp mid-dorsal knuckle with some acute symptoms. Underwent treatment by plaster jacket and brace treatment for several years which resulted in a permanent cure. At the age of thirty patient was married and has two children and remains in excellent health.

W. A boy of six years, with severe upper dorsal curve, with marked deformity. Treated for ten years in recumbency and brace. Made a permanent recovery with arrest of growth and severe deformity. Graduated from a medical school and became a practitioner of medicine.

P. Girl of five years with severe low dorsal caries, double abscess requiring incision and drainage. Recumbent treatment for two years followed by jacket treatment for four years. At the age of twenty had made an entire recovery and was in excellent health. No resulting deformity, but slight increased lordosis.

B. Boy of the age of five years. Sharp mid-dorsal caries. Patient treated for five years. Ultimate condition reported to be good ten years afterwards.

S. Boy of four; mid-dorsal caries, slight projection. Treated with brace and jacket for four years, with permanent recovery. Patient became an active lawyer and is practicing his profession at the age of twenty-five.

W. Girl of six years. Caries of spine at junction of upper and middle third. Treated for several years with brace and corset with a permanent cure, with slight deformity, but some shortening of figure. Patient became a school teacher and is active at the age of twenty-eight.

T. Age, three years. Cervical caries of acute type with complete paralysis of lower extremities and trunk, treated by recumbent treatment with frame for eight months with disappearance of paralysis, followed by brace treatment with heel support. Complete cure without deformity, enabling the patient to enter Harvard University, taking part in all student activity with no vestige of paralysis or deformity, with the exception of a slight flattening of the trunk between the shoulders.

R. Boy of five. Low dorsal caries with lumbar abscess. Treatment for six months with recumbency, with disappearance of the abscess, followed by jacket treatment for four years. A permanent recovery at the age of eighteen with normal activity and no deformity.

P. Boy of three. Severe low dorsal curve with marked deformity, treated by jacket worn for eight years. Disease of an active type with final arrest and permanent cure, but with marked deformity and some arrest of growth. Patient at the age of twenty-three a student, but with limited activity.

M. Age, two and a half years. A severe caries in the mid-dorsal region with sharp projection, but no deformity. Kept on a recumbent frame for three years on account of marked activity of symptoms, with plaster jacket worn for eight years. Abscess in left groin which became absorbed. A complete recovery without deformity and with great activity at the age of fourteen. No arrest of growth.

P. Woman. Caries of spine in the lower dorsal region treated at the age of eighteen. Treated by Dr. C. F. Taylor with braces, with a definite cure, with but little deformity, though some arrest of growth, and at the age of fifty. At this time were noted symptoms of the appearance of a second focus in the cervical region for which a support was applied with entire relief of symptoms. During this period no reappearance of the symptoms from the old lumbar dorsal caries, and two years later the patient was in good health permitting her usual activity.

M. Practicing physician, thirty years of age. Large healthy man. Six months following a fall from a bicycle was seized with symptoms of pain and disability which eventually caused a bed-ridden condition and the development of a small lumbar abscess, and extreme pain when moved. Slight lumbar vertebral projection. Treated by pocket and bed recumbency for three years, followed in four years by a sufficient recovery to enable him to practice his profession, requiring the use of a stiff corset when moving about. In the early stages of treatment a fistula in ano developed requiring operation, but with ultimate cure. At the final report the patient was enjoying excellent health and able to resume his professional work.

B. Woman, fifty years of age. Painful caries with a sharp kink in low dorsal region requiring plaster jacket with four months of recumbent treatment, followed by two years of plaster jackets, and three years of stiff corsets. Large lumbar abscess which became absorbed. Patient at the age of sixty was in admirable health, with but slight projection and no noticeable deformity, is active, and without support.

H. Girl of five. Severe lumbar caries with suppuration. Treated by plaster jackets and recumbency followed by brace treatment. Treatment continued for ten years. Patient at the age of twenty-four was a healthy, active woman, a teacher of music in the public schools, with no noticeable deformity except a projection of the lumbar spines visible in the bare back. Patient subsequently married.

TUBERCULOUS DISEASE OF HIP.

F. A girl of eight with suppurative disease of the hip joint, requiring four years' treatment. Abscess incised, sinus remained for several years and finally healed. The patient recovered; was married at the age of twenty-eight and was the mother of a healthy child. Slight shortening and some limitation of motion of the hip joint.

L. Girl. When three years old suffered from hip disease requiring treatment for three years; the father in the mean time dying of phthisis. Patient was seen fifteen years afterwards with a complete recovery, complete establishment of motion and no shortening; walks without a limp. Was a pupil in a female college. In admirable health.

B. Male. Taken with acute hip disease at the age of nineteen, requiring treatment for five years. Recumbent for six months; later ambulatory. Brace treatment with a complete recovery; no shortening or deformity, but a limitation of motion at hip joint. Patient at the age of forty-five was leading an active life; enjoying perfect health.

C. At the age of ten was treated for hip disease for five years, with the development of an abscess. Cure was established with a fair motion at the hip joint, but with one inch shortening. Patient grew to healthy womanhood and was married at the age of thirty.

H. Male. Severe hip disease in early childhood, suppurative type and sinus which persisted for twenty years. Ultimate recovery with a useful limb. Complete healing of sinus and but slight deformity. At the age of fifty is engaged in a responsible and active business occupation.

D. Severe hip disease of a painful type at the age of seven, requiring treatment for six years, with persistent sinus for several years. Ultimate recovery with a flexed hip requiring operative correction. At the age of twenty-eight the patient is in admirable health, the father of two healthy children and engaged in an active occupation.

B. Hip disease of an active type in a rapidly growing boy of five years. Treatment necessary for four years with a definite cure, but with deformity. Operative rectification for deformity necessary. Patient at sixteen is in excellent health, but has over-grown his strength.

G. Hip disease of subacute type in a boy of six. Treatment necessary for four years. Complete recovery. At the age of thirty patient is in excellent health with no deformity but some stiffness of hip joint.

D. Suppurative hip disease in child of eight. Treatment for five years. At the age of thirty patient was in excellent health and engaged in an active occupation.

D. Boy of nine. Hip disease of a subacute type. Treatment for four years. Complete recovery with some limitation of motion at hip joint. Patient sufficiently well to serve in the volunteer navy in the Spanish-American War.

G. Boy of six. Severe hip disease requiring treatment for six years with substantial recovery, but with deformity. Defect corrected and at the age of twenty-six in admirable health and engaged in an active occupation. Married.

O. Girl of five, attacked with suppurative hip disease in both hips requiring treatment for ten years. Made an excellent recovery with limited motion at both hips. At the age of twenty-eight married.

W. Male. Afflicted at the age of five with caries of the spine, and subsequently with tuberculous disease of hip joint. Was a sufferer and invalid for fifteen years. Made a sufficient recovery to study a profession, and at the age of thirty is in good health though badly deformed.

B. Boy of six with hip disease of extreme type. Formation of abscess and caries of the head of the femur and pelvis, requiring amputation at the hip joint. Patient recovered. At the age of twenty-eight is married and engaged as secretary in an active business office.

II. Woman. Suppurative hip disease beginning at the age of seventeen, requiring four years' treatment. Recovery of the hip joint and at the age of thirty-five was in excellent health and activity without hip deformity though with stiffness of the hip joint.

The following case of disease of the knee is added:

F. Boy of seven attacked by tuberculosis of the knee joint. Suppurative and severe type, requiring treatment for five years. Patient recovered with a stiff knee, but regained perfect health which enabled him, at the age of twenty-four, to engage in an active occupation.

These cases are of use as showing the condition of patients ten and twenty years after the cessation of treatment. They are without statistical value, but serve as positive evidence of the permanent restoration to health of children stricken with diseases which, without proper treatment, always cripple and frequently kill. The success in such cases should stimulate all efforts in the treatment and control of joint and bone tuberculosis and among them the open-air treatment is by no means the least.

It must be clearly understood that by open-air treatment is not meant that the children pass a few hours in the day out of doors, but that at all times they receive the benefit of air which is not confined in rooms where the entrance and exit of air is limited by fireless chimneys, slightly open windows or air ducts which do not draw. If the condition of the air in almost all sleeping rooms, even in the best appointed houses, or hospital wards is examined at midnight or an early hour in a winter morning, the prevalence of tuberculosis is easily understood, and the hygienic superiority in this regard of the tent life of the savage over the less active life of the civilized, who protects himself from cold by shutting out fresh air is manifest. To Santa Claus in his midnight raids it must be apparent that the best possible Christmas gift to the majority would be a house with a large hole in the roof.

On reading accounts of the sanitary condition of the large cities of antiquity and the Middle Ages when people were crowded in huts littered with unchanged straw, with filth plastering the streets and with no disposal of sewage, the virulence of epidemics which almost depopulated Europe is seen to be explicable. It is not impossible that

in the future the present condition of our cities where the majority of the population spends the greater part of their lives, in the air of rooms polluted with what may be termed atmospheric sewage, will be looked upon with horror by a generation to whom the White Plague will be as unknown as the Black Death or terrible ravages of smallpox are now to us. In the meantime, the open-air treatment of caries of the spine and hip disease not only in southern California or Egypt, but here in New England, even in our rigorous winter, is to be zealously advocated by all who have the health of the community at heart.

WHAT IS THE RELATION BETWEEN HUMAN AND BOVINE TUBERCULOSIS, AND HOW DOES IT AFFECT INMATES OF PUBLIC INSTITUTIONS? *

BY THEOBALD SMITH, M.D.,

Professor of Comparative Pathology, Harvard Medical School.

THE progress made in the past twenty-five years in the study of infectious diseases, notably those of the higher domestic animals, has placed us in a somewhat different position with regard to the question of the intercommunicability of infections between animals and man. When the tubercle bacillus was discovered there was but little known of the definite limitations of micro-organisms to certain hosts. Then pathogenic power towards one to the higher animals meant rather vaguely danger to all others. Now pathogenic power of any microbe towards a given animal species means that and no more, until more has been proved. We may protect ourselves in actual life against possible dangers, but we have not thereby proved that these dangers are real. Unfortunately, much of the anxiety we feel towards infections emanating from the lower animals cannot be placed at rest because the experimental method, the actual test, is inapplicable, and we must content ourselves by roundabout methods, clinical observations, inferences from analogy, and painstaking comparisons between the micro-organisms if they can be seen and cultivated.

To what extent infectious agents are restricted in their activities is shown by the fact that only one of the infectious diseases of man—the bubonic plague—is shared by one of the lower animals, the rat. The plague is known to spread freely from rat to rat, from rat to man, and less freely from man to man, so that some are inclined to the view that the plague is primarily a rat disease. There are other infections which may be transmitted from animals to man, but only under exceptional circumstances. Man does not, as a rule, transmit these to his fellow-man, chiefly because the necessary machinery for transmission is absent.

After the publication of the celebrated work of Koch in 1882, it was generally conceded that bovine and human tuberculosis were absolutely identical, and that ingestion or inhalation of the

* Read at the Tuberculosis Exhibition, Jan. 5, 1906.

baecilli from one source was as dangerous as from the other. Facing this problem of intercommunicability from the standpoint of to-day, the burden of proof really rests upon those who admit such a free transmission from man to animals and the reverse. For we cannot but assume that two bacilli of highly parasitic character, one living in cattle and the other in man, must eventually develop irreconcilable differences stamped upon them by their respective hosts, unless such remarkable mutual affinities exist as those manifested by the plague bacillus. But these should be demonstrated rather than assumed.

It was reasoning of this kind coupled with experimental observations that led me, in 1894, to study more in detail cultures of tubercle bacilli from different hosts. This is a tedious process. It was not until 1898 that a series had been studied sufficiently large to justify the establishment of two races of tubercle bacilli, — a bovine and a human type. This investigation led me to take the position that it was impossible to tell precisely how such differences in the bacilli influenced intercommunicability, and that we must begin to study cases of human tuberculosis to determine more accurately which type of disease may be referred to animal sources.

At the same time I contended that these results contradicted the extreme fear with which bovine tuberculosis was being regarded, and that it did not justify the very heavy expenditure of public funds in the destruction of all tuberculin-reacting animals, and what was still worse, the condemnation by law of the flesh of even the mildest, most insignificant cases as unfit for human food. This position was all the more necessary, since the importance of the strictly human source of tuberculosis, the sputum, was being pushed to the background and our state was appropriating not less than a quarter of a million dollars a year for the eradication of bovine tuberculosis.

Now it is possible that we may be threatened again by legislative schemes to pay out of the public treasury money to defray the immunization of young cattle according to von Behring's scheme. What the state can justly do is to pay for suitable experiments to study this method and to prepare the vaccine, but nothing more. If the state has any money to spare, it should be reserved for the care and housing of human consumptives.

The work of studying the tubercle bacillus along lines laid down by me was being carried on quietly, notably by Ravenel in Philadelphia. It was not, however, until 1901 when the great authority of Robert Koch placed itself directly across the path marked out by sanitarians since the publication of his great discovery in 1882. He maintained not only the radical distinction between bovine and human tuberculosis, but went so far as to regard the bovine disease as a negligible quantity in our struggle against the human disease. While he may be said to have gone too far in this latter position, his views exercised a salutary influence in forcibly drawing

the attention of the world's sanitary machinery from a minor to a major source of disease; and without doubt, the public anti-tuberculosis movement of to-day, of which this meeting is a part, gained an enormous impetus through his somewhat one-sided position.

The wave of opposition raised by Koch's address led to the appointment of a number of commissions to investigate the subject anew. The English government had only a few years before issued a very large report by a Royal Commission, in which the bovine and the human disease were regarded as identical. A new commission was formed at once which established, perhaps, the most elaborate temporary plant in the world for the reinvestigation of this question. A leaflet issued several years ago leads us to infer that in its final report the commission will adhere to the platform of the former commission. A Royal Commission appointed by the Imperial Health Office of Germany has recently issued a series of reports, in which it places itself wholly on the ground taken by me in 1898.

Many minor investigations upon this subject have been made and published during the past four years, which range themselves on one side or the other of this sanitary problem.

If we briefly summarize the results of these investigations, we find two facts firmly established: 1. The conception of two types of mammalian tubercle bacilli, a bovine and a human type. 2. The occasional presence of the bovine type in cases of human tuberculosis.

How often the invasion of the human subject with bovine bacilli takes place cannot be stated with any degree of accuracy, for all investigators have turned their attention chiefly to cases originating in the digestive tract or its associated lymph nodes, *i. e.*, to those cases in which infection through raw milk may have taken place. We are, however, in the position to affirm that the old notion that all tuberculosis originating in the intestinal tract is of bovine origin is not true. Of five such cases studied by me, one was associated with bovine bacilli. Of twelve studied by the German Commission, six were associated with bovine and one with both kinds of bacilli. Ravenel had reported several cases similarly the Department of Agriculture at Washington. I have not at hand the means for calculating the percentage of intestinal tuberculosis associated with bovine bacilli, but it may be roughly estimated at 20% to 40%. This may seem a relatively high rate, but the following circumstance must be taken into consideration:

1. A certain proportion of the cases are stationary. The disease is restricted to the mesenteric lymph glands.
2. Where tubercular ulcer due to thickening of bacilli exist, the bovine origin is often difficult to be admitted when this might be impossible in an intact mucosa.
3. Tuberculosis of a terminal organ is a relatively rare affection.
4. In Japan, where milk does not play any appreciable rôle in the feeding of infant and

children. human tuberculosis, including the intestinal disease, is as common as in other countries.

I can merely refer, in passing, to the question of the transformation of the bovine into the human bacillus in the human body. If this were possible, our efforts to trace the sources of tubercular infection by bacteriological methods would be fruitless. While I am prepared to admit a certain change manifested by reduction in virulence, the evidence we possess is conflicting and hardly in favor of the transformation theory.

It is needless to state that much more work must be done before we can formulate precisely the relation which the bovine bacillus bears to tuberculosis of alimentary origin. In the meantime, certain broad facts stand out above the fog of controversy to which those to whom the health and well-being of large numbers are entrusted may cling with a reasonable amount of confidence.

In the first place, the bovine bacillus has been found almost exclusively in children under ten years of age. Phthisis and the other forms of tuberculosis in adults are, so far as we know, almost wholly of human origin. In institutions in which children are cared for, the source of the milk should receive careful attention, and herds belonging to the institution should be free from any traces of this disease. In institutions harboring adults there need be less anxiety on this point, and if all animals of reduced vitality or whose udders are not above suspicion are eliminated, the danger of infection may be regarded as exceedingly small. This standpoint is based upon the following well-established facts:

1. With few exceptions, cattle reacting to tuberculin are in an early or latent stage of the disease, during which tubercle bacilli are not excreted in the milk.

2. When tuberculosis becomes generalized, which frequently happens after parturition, and the udder and uterus become affected, physical examination and microscopic examination of the secretions should detect it.

To these we may add that it is highly probable that we can successfully resist an occasional tubercle bacillus, and that most of us, at one time or another, have ingested without harm a few bacilli in milk or butter. It is equally probable that our resistance may give way at an unguarded moment when our alimentary tract is being daily flooded with bacilli from a tubercular udder.

In view of these data it is obvious that a careful periodical inspection of dairy herds cannot be dispensed with, and that such inspections should be made a necessary function of state and local boards of health, or of specially organized bureaus, in order that any advanced cases of tuberculosis may be detected, removed and destroyed. More than this cannot be demanded at present in the interest of public health. Yet it should be the pride of the head of every one of our public institutions to keep the dairy herd free from tuberculosis.

SHOULD THE TUBERCULOUS INSANE IN HOSPITALS BE SEGREGATED? *

BY O. F. ROGERS, M.D.,
Trustee of Danvers Insane Hospital.

THE tuberculosis problem presented to the officers of a hospital for the insane is somewhat different from that presented to the medical attendant of the sane.

It is generally not necessary or wise to isolate the tuberculous member of the family, though certain cases in the last stages of the disease constitute an exception to this rule.

If a tuberculous patient and his family are in moderate circumstances, possess ordinary intelligence and are wisely instructed by their physician, the danger of infection is slight, even though very few changes are made in the mode of family life.

But it is otherwise with the insane. Most of the insane are incapable of appreciating the importance of the measures necessary to be taken to prevent the dissemination of the disease, nor can they be trusted to carry out these measures, no matter how simple or how carefully explained to them.

All of the Massachusetts State Hospitals for the Insane are crowded, imperfectly ventilated, and many of the rooms get little sunshine. A large portion of the inmates spend but little time in the open air, especially in the colder months.

Much the larger portion of the insane in hospitals are in a condition of lowered vitality; very many are the subjects of organic changes of a grave character, and a considerable portion are in a condition of mental depression or excitement, very unfavorable to the maintenance of bodily nutrition.

Thus it happens that the inmate of a hospital for the insane lives under conditions favorable to the growth and dissemination of the tubercle bacilli and unfavorable to its destruction, while his capacity of resistance to tuberculosis is greatly reduced by his physical condition.

The result of all these conditions is an enormous death-rate and an even larger proportional death-rate for tuberculosis.

If any proof of this statement is needed, the following figures afford it: During the year 1904 the number of deaths in the city of Boston from tuberculosis was 2.06 per 1,000 inhabitants. During the hospital year, ending Sept. 30, 1905, the number of deaths from tuberculosis in the Danvers Insane Hospital was 17.06 per 1,000 inmates. The institution death-rate for tuberculosis was over eight times the city death-rate. During these same years the city death-rate for all diseases was 17.50 per 1,000 inhabitants; the hospital rate was 116.46 per 1,000 inmates, or about seven times the city rate. The large death-rate is not peculiar to the Danvers Hospital; it is found wherever considerable numbers of the insane are confined within walls.

Very striking evidence of the influence of confinement in causing tuberculosis is afforded by

* Read at the Tuberculosis Exhibition, Jan. 5, 1906.

the statistics of the death-rate of prisons. The yearly death-rate of the State Prison at Charlestown for the period of three years ending in 1904 was 7.31 per 1,000 inmates. Nothing could more clearly demonstrate the excellent physical condition of the prisoners than this death-rate of 7.31 per 1,000 in comparison with the 17.50 rate of Boston and the 116.46 rate of the Danvers Hospital. Yet in spite of the good health of the prisoners and consequent abundant resisting power, tuberculosis caused 38.70% of all deaths in the prison during the ten years ending in 1902. Undoubtedly the cause of this is to be found in the close confinement.

In brief, the situation is this: The hospital must receive all who are committed to it; hence the crowding, with all its results. The mental condition of the patients is such that intelligent and sustained efforts by them to prevent the spread of tuberculosis is not to be expected. The deficient resisting power of the insane due to their physical condition cannot be materially improved. It is self-evident that most of the conditions to which the excessive prevalence of tuberculosis in insane hospitals is due cannot be remedied by any measure now at the command of the trustees.

The trustees and superintendent of the Danvers Hospital, impressed by this fact, have decided that segregation of the tuberculous is the only available remedy. For three years eight or ten female patients were kept in tents on the lawn during the summer months. They enjoyed the tent life and several made rapid improvement. Encouraged by the result of this experiment, the superintendent recommended that two buildings should be erected of capacity sufficient to accommodate all of the tuberculous patients in the hospital. These buildings are now nearly completed. Each building will shelter fifteen patients. They are practically alike, one for women and the other for men. They are about 76 feet long x 21 feet wide. They front the south. Each has a piazza ten feet wide running the whole length of the front of the building. The front is nearly all glass, and there is considerable glass in other portions of the walls. The windows are double, and above each window is a glass transom, and all can be raised or swung. The buildings are heated by steam pipes running beneath the windows on three sides of the wards. Fresh air is taken directly through the walls. A sheet iron arrangement causes the air to flow over the steam pipes before it enters the wards. Each building has two wards, 30 feet x 20 feet, 13 feet high, with a room between them 16 feet x 20 feet containing a fireplace. There is a bath room and a dressing-room that can be kept warm at all times. The walls are lathed and plastered and painted with lead and finished with a coat of enamel. The floor is covered with mild linoleum of the best quality. There are openings for ventilation in the ceilings and gable ends. The wards are lighted by the Cooper-Hewitt electric light. There are no window guards.

There are supposed to be now in the hospital,

about twenty-four cases of tuberculosis. None of this class are excited, or in such condition that they could not be kept, with a reasonable oversight, in the wards as constructed.

It is expected that a day nurse and a night nurse will be able to care for one building. Possibly when full, three nurses will be required. Just what will be the additional cost of caring for patients cannot now be stated, but it is certain that it will not greatly exceed the present cost. Much will depend upon the diet scale adopted. By building these wards the capacity of the hospital is increased by thirty beds, at a per capita cost of about \$125, furnished ready to occupy. The per capita cost of the main hospital, reckoning its capacity as 1,000, is \$1,600. The fact that the state has to provide yearly additional accommodations for four hundred insane, and that the need of economy is urgent, would of itself seem to justify the building of these wards.

The attempt to cure, control, or decidedly diminish tuberculosis by segregation cannot possibly succeed unless the disease is diagnosed early.

If it is true, as I believe it to be, that the average physician does not make an early diagnosis of tuberculosis, it seems that at least one physician in a hospital ought to be given the opportunity to become expert in its detection. Each patient ought to be carefully examined at regular intervals of a few months. This will render possible the removal of the patient from conditions most unfavorable to his recovery to favorable conditions, at a stage when, if ever, favorable results from treatment may be expected, and before he has become a menace to the health of the other inmates of the hospital.

Segregation seems to offer a rational, practicable, and not too expensive remedy for conditions that urgently demand relief.

WHAT SHOULD BE THE STATE POLICY REGARDING TUBERCULOSIS IN INSANE ASYLUMS?

BY OWEN COPE, M.D.,
Executive Officer, Massachusetts State Board of Prisons.

THE insane are entitled to all the resources of medical skill and treatment available in our civilization. If ethical considerations in relation to the tuberculous insane were not superadded on this point, the welfare of inmates, fellow-patients, nurses and others would demand the strictest application of this principle.

The treatment of tuberculosis in the insane presents all the difficulties encountered in dealing with the disease in general and other affections from mental alienation. Its presence can be detected without the most painstaking observation and systematic physical examination, owing to the blunting of sensibility, the morose, indolent and apathetic states, to the advanced degree that cough and other cardinal symptoms

*Read at the Tuberculosis Conference, Jan. 5, 1906.

tions may be so slight as not to attract attention. The insane patient, through weakness of mind, perverse tendencies, delusive ideas or willful misconduct, often cannot be relied upon to co-operate in efforts either to establish the right régime for himself or to safeguard his fellow-patients from danger of infection. Hence, alertness in diagnosis and effective segregation are especially important in the management of this class.

The complete separation of the tuberculous from other insane under felicitous conditions is not easy. Thought must be taken of the different stages of the malady, the character of the patient, his native idiosyncrasies and morbid propensities, his environment as to associates and depressive influences, economy of arrangements for his care and safe custody, the size and location of the institution. The satisfactory isolation of the few tuberculous patients of diverse characteristics in the small hospital involves such difficulties of classification and excessive cost proportionate to the amount of work, as to be almost prohibitive. Such limitations might necessitate their aggregation at some convenient point, possibly in connection with the most suitably situated of such hospitals. Centralization, however, is not desirable in itself. Patients should be kept near their relatives and friends, so far as possible. Small groups of the tuberculous are preferable to large ones. The absolute elimination of the problem from any establishment would be impracticable, owing to the insidious nature of the affection and the obstacles opposing in individual cases, and the attempt might result in inadequate facilities for its treatment. Furthermore, the assemblage of all tuberculous inmates of the hospitals and asylums of Massachusetts would not probably bring together a sufficient number to justify on economic grounds the founding of an independent hospital, while no existing one would be likely to invite such an addition.

The necessity, however, of either contingency is obviated by the suitable location of all our institutions to afford appropriate conditions, and by their adequate size, present or prospective, to facilitate classification and furnish economic warrant for each to deal with the matter for itself.

Naturally, methods will vary at different hospitals, and properly, so far as the essential requirements are met in providing the best conditions of treatment for the patient himself and adequate protection from infection for others. The present tendency seems to be away from the tent, as inconvenient and not habitable during the severe weather of this climate, to the small, inexpensive, one-story, wooden pavilion, habitable all the year round, equipped with the necessary accessories, supplying abundant sunlight and fresh air, one for each sex, in close connection with and administered from the main plant. The Danvers Hospital and Medfield Asylum are about to open such pavilions. Westborough and Taunton are moving in the same direction. Some others are segregating the bed-ridden in special

dormitories; others are using verandas adjoining the wards, where the patients practically live out of doors day and night.

Probably experience will show that a combination of methods will best serve the purpose. Separate cottages are the most desirable form of provision and will best serve the needs of the main body of such patients. Nevertheless, the dangerous or scheming patient will require the safer custody of the closed wards, strictly supervised to prevent violence or escape. The quiet, clean, tractable patient, sensitive to surroundings and associations, will enjoy and receive benefit from the diversions and congenial company to be found only in the better wards in the main building. Spatial separation may be conceded for these advantages, so far as reliance may be placed on the patient's observance of rules necessary for the protection of others, or oversight may be effective to the same end. In such cases, sun-rooms, screened verandas and other adjuncts to the common wards will be indispensable.

WHAT SPECIAL INSTRUCTIONS REGARDING TUBERCULOSIS SHOULD BE GIVEN INSTITUTION NURSES AND OTHER EMPLOYEES?

ARE NURSES CARING FOR CASES OF TUBERCULOSIS IN DANGER OF CONTRACTING THE DISEASE?*

BY JOHN H. NICHOLS, M.D.,
Superintendent State Hospital, Tewksbury, Mass.

It is my purpose to speak regarding tuberculosis in hospital wards, and what is said will have reference more particularly to care and treatment of advanced or terminal cases rather than the earlier stages of the disease.

We have a small proportion of comparatively early cases to care for and believe in the out-of-door treatment for them, and have a camp where these patients can be practically out of doors throughout the year; but, as this stage of the disease and its treatment has been so carefully considered in other parts of the program, I will say nothing further in that direction.

There is no question but what those cases nearing the end of this malady are the ones that appeal most strongly to our sympathies, and, as the considerations, methods and practices for making these patients comfortable are very exacting to the nurse, it seems best that this class of patients should be treated in well-constructed hospital wards, and not in tents, camps or cheaply constructed pavilions. The nurses, and all of those engaged in caring for these patients, need every encouragement and all of the best facilities for caring for the sick that it is possible to obtain.

Our instruction to nurses in caring for consumptives in the hospital wards is practically the same as that which is given to the general public in dealing with the disease. We impress upon them the nature of the infection to which they

* Read at the Tuberculosis Exhibition, Jan. 5, 1906.

are exposed, and teach them about the micro-organism, the tubercle bacillus, without the presence of which the disease — tuberculosis — cannot exist. They are told how vicious and potent an organism it is when it is allowed to have its sway and when things are favorable to its spread, and that it abounds in the forced exhalations and expectoration of consumptive patients, which, when dry, separates into fine particles, mingling with the dust and floating about in the room where it exists, until it is inhaled or taken into the lungs of those occupying the room; then, if the vitality of the person is in a condition favorable to the disease, a tuberculous process is started up in the lungs of the new victim. People in apparently perfect health are liable to contract the disease if exposed continuously to the infection under conditions favorable to its spread, although those in a delicate state of health, or a receptive condition, may be in contact with the disease with but little danger to themselves, provided that all the proper precautions are taken.

The conditions favorable to its spread are filth, foul air, overwork, lack of proper and sufficient food, lack of sufficient exercise and irregular habits. The great enemies of tuberculosis, or safe-guards against it, are cleanliness, fresh air, sunlight, moderate exercise, regular habits of eating, sleeping and bathing, and especially out-of-door life.

We tell the nurses there is great danger in the dust which is in the ward or room of a consumptive patient, which may be laden with the tubercle bacillus, and that all the dust must be kept out of the room, removing it with moist cloths which are rinsed and afterwards allowed to stand in pails containing a solution of some antiseptic or germ-destroying solution.

We advise them not to let the patients breathe in their faces when they are working over them or when talking with them. We teach them that all the sunlight which is possible should be admitted into the room, and that windows should be open at all times of the year, day and night, but, if possible, on the side of the room away from the wind, the patient, of course, being covered with a sufficient number of blankets to keep the body warm.

The expectoration of sputum should be received in paper receptacles made for the purpose, which, with their contents, should be burned every day. It is well also to make use of paper handkerchiefs, or pieces of gauze, which also should be destroyed by burning each day.

In regard to the nurses or other employees contracting the disease while on duty, I believe that nurses in a hospital for tuberculosis, with many patients, in wards that are kept perfectly clean, where dust is always kept down, where the windows are kept open, and where there is no over-crowding of patients, are safer from danger in caring for tuberculous cases than they are in many of the general hospital wards.

I have known times when nurses, especially male nurses, and not infrequently young doctors, objected to a service in consumptive wards, generally, however, because their parents or

others have advised them to keep out of those wards. This advice is unwarranted, for with fourteen years of hospital experience with tuberculosis, during which time we have cared for more than five thousand cases, mostly in the advanced stages of the disease, I have known of only one case where attendant, nurse or physician has beyond doubt contracted the disease in the wards or in the discharge of their duties. I have known of only one death where one of them may have contracted the disease in the discharge of his duties.

For over five years our hospital for consumptives has been situated one half mile from where the nurses go to their meals or their sleeping apartments, and even prior to that time they have always been required to travel out of doors three times a day to their meals and have slept in rooms outside of the hospital buildings, which has, of course, been a condition greatly in our favor, and strongly indicating that a certain amount of out-of-door air is the great safeguard from this disease.

I believe that no competent physician or nurse, conscientious in the work, ought to exhibit any timidity whatever in caring for consumptive patients when they are allowed to control the essential sanitary regulations.

ON THE IMPORTANCE OF EARLY DIAGNOSIS IN CASES OF PULMONARY TUBERCULOSIS.*

BY HENRIETTA C. CLARK, M.D., BOSTON.

Visiting Physician in the Massachusetts State Sanatorium at Rutland, Vt.

There are consumptives and consumptives. Here is our first picture representing the popular idea of a consumptive. He is a thin, cadaverous-looking individual, with sunken-in chest, a stooping figure, hollow cheeks, pallor, hectic flush, high fever, bad cough, feeble walk, short breath and evidences of exhaustion, with hemorrhages, night sweats and many other symptoms, which are only too well known.

Sure enough, that is a fairly true picture of many cases, but nowadays we call these advanced, and they are generally hopeless, and, so far as most of them are concerned, we regret to say, in spite of all that the best medical skill can do, in the best climate in the world, in sanatoria or without, the procession is still marching steadily towards the graveyard, as it always has done.

Here is our second picture. To the casual beholder a consumptive of this class may look almost and sometimes quite like a well man. It is not the symptoms only faintly resemble, suggest those of the first picture, already given. We call these early cases and most of them can be cured. Very often visitors to our State Sanatorium at Rutland, on being shown the cadaverous-looking specimens of men and women, make the remark that they have great difficulty in believing that they can possibly be victims of pulmonary tuberculosis. I am happy to have them today to show you as a sample of the better class of early cases in the State Sanatorium.

* Read at the Tubercular Conference, New York, 1902.

three patients who feel well and who look well externally, but who, nevertheless, have the germs and other evidences of the disease, and might easily be upset by a little improper living. Within a comparatively few years medical science has discovered methods of curing the great majority of cases of pulmonary tuberculosis, if taken before they have progressed far; but to be successful to any considerable extent, the cases must be taken early. Then the cure will not only be more certain, but also far quicker and pleasanter.

If a small fire is discovered in a wooden building, a few dipperfuls or a pailful of water may extinguish it; but if much time is lost, we all know the result. Occasionally a small fire in a wooden building may burn itself out without spreading to the rest of the structure; and undoubtedly now and then a tubercular deposit in the lungs may get well without the institution of rigorous measures, or even without the patient's knowledge that he has had such trouble. Nevertheless, those who are familiar with the circumstances in either case would dread to run the great risk which would come by neglect.

Practically, lung specialists all over the world have proved that fully three fourths of the really early cases can be cured, but exceedingly few of the far advanced cases; and that those in between are more or less doubtful, approaching the status of the class to which they come nearest.

This statement, of great practical import, which is perfectly true and not a bit exaggerated, cannot be made too emphatic. Nor can it be made too often. It should be proclaimed from the house tops, in season and out of season. It should be forced upon the attention of every one in the community. In it are involved some of the most vital questions in the modern crusade against tuberculosis. This crusade cannot possibly succeed, if we neglect the proper consideration of early diagnosis; and unfortunately the victims of the disease are often very unwilling to take it into consideration themselves.

According to our modern ideas, a consumptive is strictly a person who is dying of an advanced tubercular disease of the lungs.

If we could cure all cases of early tuberculosis, we should have no more consumption. An early case of pulmonary tuberculosis bears about the same relation to an advanced case that a tadpole bears to a frog. If we could exterminate the tadpole, we should have no frogs.

In order to exterminate the tadpoles, they must first be recognized. Some men know a frog when they see it, but overlook the tadpole. Many physicians, who can recognize advanced cases of tuberculosis, overlook and fail to recognize the early cases. There is often as much difference between these early and late cases as between the stages of the batrachians.

A few years ago, when almost all cases died anyway, no matter how early they were seen, it did not make much difference at what stage they were discovered. Now that we know that the time element is the most important factor in the

result of treatment, physicians are being especially stimulated to make as early a diagnosis as possible.

SHOULD TUBERCULIN BE USED IN INSTITUTIONS AS A DIAGNOSTIC MEASURE?

Briefly, I should say that occasionally, though not often, it is wise and proper to use it. The first thing to do in all instances is to examine the chest. In the great majority of cases of tuberculosis which come to us, a physician who is skilled in such examination by auscultation and percussion can, by this means, together with the history of the case, properly recognize the disease, and often, too, before the tubercle bacilli (the germs) appear in the sputum. Sometimes, to be sure, the bacilli give the prior information, although they do not show the extent or location of the disease.

But it occasionally happens that the physical examination, the sputum, the symptoms and the history of the case are not sufficiently explicit to clear up a doubt as to the diagnosis, and it becomes desirable to settle it in some other way. In such cases the tuberculin test, which is so much used in cattle, becomes serviceable.

Wide experience has shown that, if properly used, no danger follows its use. It is not infallible and fails in some cases, but in the majority gives trustworthy information. If it reacts, it produces a temporary sickness, lasting for a few days, somewhat like a severe vaccination. For these and other reasons it should not be used in institutions or anywhere else, if we can make a satisfactory diagnosis (as we usually can) in other ways.

THE TREATMENT OF TUBERCULOSIS IN PUBLIC INSTITUTIONS.*

BY WILDER TILESTON, M.D.,
Assistant Visiting Physician, Long Island Hospital.

THE treatment of tuberculosis in public institutions is a broad subject, and the time allotted me is brief, so I shall have to restrict myself to a few general remarks, omitting many details. It may be considered from three points of view, that of diet, of hygiene and of medicinal treatment.

The diet should be nourishing and varied. In food value it should equal, or even exceed, that of a healthy working person, that is to say, about 3,000 calories. This large amount of food is necessary to offset the increased breaking down of the body tissues, which is constantly taking place in phthisis, and to make up for past losses. Care must be taken, however, not to upset the digestion by overfeeding, and the amount of food which can be taken with advantage will vary according to the individual. In order to get in a maximum amount of nourishment, it is best to increase the number of meals to five or six daily. These are to consist of the usual three meals, with additional light meals in the middle of the

* Read at the Tuberculosis Exhibition, Jan. 5, 1906.

morning, in the afternoon and at nine in the evening. For these extra meals a glass of milk and a cracker are sufficient.

For consumptives, food should be as varied as possible, for too great monotony soon takes away the appetite. It should contain an abundance of all three forms of food, — proteids, carbohydrates and fats. An exclusive milk diet is not to be recommended, for it is likely to give rise to digestive disturbances, on account of the large quantities (four to five quarts) which must be taken. Alcohol is better left out of the regular treatment in institutions, for various reasons.

It is of the greatest importance that the food be properly cooked and attractively served, for if it is not, both appetite and digestion will probably suffer. It is well known how much these functions are dependent on the mental state, and it has recently been shown, by experiments on animals, that there may be even entire failure of secretion of the gastric juice, due to psychic influences. I think that the quality of the food in New England institutions is usually good, but it is frequently spoiled in the cooking, and it is here that there is room for improvement.

*Patients with fever usually have some disturbance of digestion and should be fed accordingly. Fever of itself is not an indication to restrict the diet. Gastric and intestinal disturbances call for early and appropriate treatment, for if neglected they may lead to serious impairment of the digestive and absorptive functions.

The weekly weighing of the patient is an important aid to the intelligent treatment of tuberculosis, and is, perhaps, the best guide to the amount of food to be given.

The hygienic treatment of the consumptive next demands consideration. Here the underlying principles are two, — fresh air and rest. Not only should the patient be out of doors all day long, and every day, but, where practicable, he should also sleep out of doors, or at least in a room to which the outer air has free access. Recent work in this direction has shown that the night air in this climate has no injurious effects, provided that plenty of bedding is supplied. The various forms of out-door treatment are well illustrated by this exhibition, so that it is unnecessary to enter into details.

There is one point, however, which is of great importance, and frequently neglected. This is the out-door treatment of bed-ridden patients, for whom it presents almost the only hope of recovery. It can be easily carried out by providing a veranda, which connects into the ward by means of a door opening even with the floor. The beds can then be rolled out with the patients in them.

The rest treatment is equally important with the fresh air cure; with few exceptions, all patients with fever should be kept in bed until the evening temperature is normal. It is, therefore, necessary that the temperature of all patients should be taken daily; if this can be done but once, it should be between 3 and 6 p.m., the time when the temperature is most likely to rise. After the patient is free from fever, it is

still necessary to continue the rest treatment, but in a modified form. He is now to be up, but should spend most of the day in a reclining chair. The amount of exercise should be increased very gradually, as a return of cough and fever is almost sure to follow over-exertion.

The stronger patients may be given light out-door work to do, but only after they have been free from fever for a considerable time.

The drug treatment of tuberculosis is of secondary importance. The specific treatment with the various forms of tuberculin has not yet given sufficiently brilliant results to make its general adoption in public institutions advisable. Creosote and its derivatives probably act solely by improving appetite and digestion, and should be used only so long as they have this effect. Other drugs are to be employed according to the symptoms; in general, the fewer the better.

To sum up the whole matter in a few words, the treatment of tuberculosis in public institutions should aim to approach that in use in modern sanatoria, and it is only by the use of such methods that success can be attained.

THE SUPPRESSION OF TUBERCULOSIS IN OUR DAIRY HERDS.*

BY AUSTIN PETERS, M.V.C.S.,

Chief of the Cattle Bureau of the Massachusetts State Board of Agriculture.

I HAVE been asked to make a few remarks upon the eradication of tuberculosis from dairy herds, more especially from herds owned by our public institutions.

Until within a few years the tubercle bacillus of cattle was supposed to be identical with that of man, but more recent researches made by Theobald Smith, Koch, and others have shown that there is a difference between the bovine tubercle bacillus and the human sputum bacillus. Evidently they are varieties of the same germ, modified by a vast number of generations of cultivation in different hosts. These changes are so marked that it is highly probable that they have become permanently fixed.

The sputum variety has but little virulence for cattle and other animals, while the bovine species seems to be very virulent towards cattle and other animals. As the sputum bacillus is virulent to humans, it is assumed that the bovine form is of little danger to mankind, in comparison to the views held a few years ago. This seems to be borne out by experience, as authentic cases where human infection can be traced directly to the use of meat and milk are very infrequent, and phthisis does not seem to be any more prevalent among men who work in cow barns than in ordinary pursuits. However it must be remembered that the development of tuberculosis is very insidious and that a person may not show evidences of the disease for some months or possibly even years after the infection. The disease remaining latent in some remote lymphatic

* Read at the Tuberculosis Exhibition, Boston Hotel, Jan. 6, 1906.

gland for a long period, and developing later under favorable conditions, thus making it impossible to trace the source of the infection in many instances.

It is a well-known fact that the milk of cows suffering with tuberculous udders, or with extensive tuberculosis even when there are no lesions of the udder, is capable of conveying the disease when fed to calves, pigs, and small experimental animals, and such milk is certainly unfit for human food when used uncooked, as demonstrated by the experiments of Ernst, myself and others. While sterilized milk is safe as far as its power to convey tuberculosis is concerned, it is less digestible for infants and invalids. Hence the milk from such cows should be prohibited as an article of food:

The importance of the matter of a healthful milk supply must not be overlooked in the consideration of other matters of greater importance in connection with this meeting. Admitting even that bovine tubercle bacilli in milk make it more palatable and nourishing than it otherwise would be, and that their presence is not harmful, there still remains the commercial aspect; with contagious pleuro-pneumonia, foot and mouth disease, and rinderpest, Walley includes, among the four bovine scourges, tuberculosis, which causes a large annual pecuniary loss to cattle owners, and for this reason should be diminished to the greatest possible degree. The herd of a public institution in Massachusetts that is not infected to a greater or less extent with tuberculosis is the exception, and not the rule, there being hardly any that have not suffered to a considerable amount from this scourge.

One great obstacle to keeping them in a state of freedom from this malady seems to be a lack of fixity of purpose. These institutions have their boards of trustees and superintendents, and occasionally a new trustee will be appointed, or a new superintendent take charge, who will insist upon cleaning up the herd; but with a change in the personnel of the board of trustees, or a change in superintendents, conditions lapse into what they were prior to making the attempt, matters become as bad as before, and the money expended is found to have been simply thrown away.

Numerous instances might be given where within a few years herds belonging to some of our state and city institutions have been freed from tuberculosis, under state supervision, and at the state's expense, tuberculin-tested cows placed in new barns, or in the old barns after thorough disinfection; but in a few years because of failure to test the animals once or twice a year, and carelessness in the purchase of new cows, the infection is reintroduced and the herd again becomes a tuberculous one.

While these efforts are spasmodic and sporadic little benefit will result; it is only a continued, systematic, definite purpose that will avail. With tuberculin as a diagnostic agent, it is perfectly possible to eliminate diseased and infected animals from the herd, and with thorough disin-

fection and the purchase of only tuberculin-tested animals, and a tuberculin test every spring and fall, a healthy herd can be maintained. A practical method of immunization of cattle to be introduced into herds where tuberculosis exists or has existed is also greatly to be desired.

Koch, von Behring and others have done work in this line, and von Behring claims to have discovered a satisfactory method. So far, it has only been applied to calves to be raised in herds where tuberculosis exists. Young calves receive an intravenous injection of a certain quantity of an attenuated human tubercle culture, and in three months a second dose five times the size of the first is given in the same way. It is claimed that calves thus treated are immunized for a considerable period, two or three years; whether this immunity lasts for the natural length of the animal's life it is yet too soon to say. This method may in time prove of great value to farmers, especially to breeders of pure bred stock owning herds in which tuberculosis exists.

If a similar method can be applied to older cattle about to be introduced into dairy herds where tuberculosis is present, it may prove of great benefit. New purchases after being tested with tuberculin and found to be free from tuberculosis can be placed in a quarantine stable and immunized before being introduced into the herd. Such a plan, if it proves practicable, would be of great assistance towards the eradication of this disease from herds which depend upon the purchase of new milch cows to replenish the stock rather than raising young animals for this purpose.

Many of the cows used in Massachusetts are brought here from without the state, and the regulations of the Cattle Bureau of the State Board of Agriculture require all these animals to pass a satisfactory tuberculin test before being placed upon the market, reacting animals being killed. About twenty thousand head, equal to 10% of the milch cows in Massachusetts, are thus tested annually, but in a few years many of these undoubtedly develop tuberculosis, and are killed and paid for by the state.

As far as the public health is concerned, milk consumers in this state receive a certain amount of protection, as the Cattle Bureau kills twelve or fifteen hundred head yearly that show marked physical evidence of disease or that have tuberculous udders, and such animals are the chief sources of danger; but much of the milk used comes from New Hampshire and other states to which this protection does not extend.

A little work is done by the Cattle Bureau in assisting owners to free their herds from disease, but a great deal cannot be undertaken in this direction because of limited appropriations, and much depends on individual effort, which does not seem to appeal to any great extent to the average farmer.

At present the chief work performed by the state is confined to killing the worst cases, and insuring as far as possible a market from which purchasers can obtain healthy cows if they will

buy animals that have come from out of the state.

If time permitted, a word upon the sanitation of stables would not be amiss, but all that can be said here is that they should be light, well-ventilated, well drained and clean, but this alone is not sufficient without the aid of tuberculin; and, if one is discovered, a practical method of immunization. Without means of immunization, however, tuberculosis can be eradicated from a herd with the aid of tuberculin and proper methods of disinfection and management.

DAY SANATORIUM FOR CONSUMPTIVES, PARKER HILL, BOSTON.*

BY DAVID TOWNSEND, M.D.,
Physician in Charge

THE Day Sanatorium, or Camp, for Consumptives was founded by the Boston Association for the Relief and Control of Tuberculosis. The camp was modeled after similar ones in use abroad, especially in Berlin, and was, I believe, the pioneer one of its kind in this country. This camp was purely a day camp, that is, the patients came in the morning, went home in the late afternoon.

The spot chosen, which the Association was enabled to obtain through the courtesy of the Robert B. Brigham Hospital trustees, was an orchard, a part of an old estate on top of Parker Hill, about 220 ft. above the sea and within three miles of the State House. This contained about $1\frac{1}{2}$ acres.



Living tent and kitchen.

The equipment of the camp consisted of a large mess tent, 20 ft. x 50 ft., with a board floor used as a dining tent and a shelter in stormy weather. In this were the tables (covered with white oil cloth easily cleaned) and settees. At one end was the staff table and a table for books, magazines and games. There were three smaller wall tents, 10 ft. x 12 ft. each, one for the care taker, who spent his nights on the premises, one for the administration tent in which were the scales and other necessary implements; and one for a store house for the couches and bedding.

* Read at the meeting of the Suffolk District Medical Society, Oct. 28, 1905.

chairs. The kitchen was practically a "lean-to" built against a barn and open to the north, with curtains for use in stormy weather. One half of this was boarded in for a pantry and contained the ice chest, milk cooler and household stores; the other half contained the sink, boiler, range (where all the meals were prepared) and the patients' dishes. Over the kitchen was the tank which held about one hundred gallons. This supplied a sanitary, established near by, and the boiler. It was connected with the city water supply. The tank had to be kept filled by a



Immunization and care taker's tents.

pump as we were above the limit of the city's low pressure service. The sanitaries and sink emptied by a drain into the city sewer, some 200 to 300 ft. away. In addition there were two benches with basins, one for the men, one for the women, where they washed, and the sputum incinerator, which was simply a cast-iron ash barrel.

The staff consisted of a matron, who was a trained nurse, an assistant nurse, a night watchman, a cook, a cook's helper and a physician. All save the physician received salaries.

The camp was opened July 6, 1905, and closed Oct. 31, 1905, practically seventeen weeks. The aim of the camp was to accomplish the maximum of good with the minimum of expense. Its chief object was the education of the patient in the care of himself and of his sputum, to prevent spread of the disease. We had as few rules as possible and tried to relieve the patients from all sources of worry. Each patient was seen alone, by the matron, every morning, and any worry or anxiety willingly listened to and the cause removed, if possible. The daily capacity of the camp was 50 to 60 patients, but on only comparatively few days did we have 50 or above.

The patients who applied for treatment came either through the various hospitals or through private physicians. Cases at all stages were taken, the only point insisted upon was that they should not be so far advanced as to be unable to walk down the hill to the cars at night. The cases were for the most part of the second and third stages. The patients came each morning by the electric cars from various parts of the city in

few were from the surrounding towns) to Roxbury Crossing, about three quarters of a mile from the camp, and were brought up by a park wagon which made four trips (8, 8.45, 9.15, 10). On stormy days the wagon was not sent, but those who could walk up the hill were gladly welcomed. At the outset only 4 or 5 could, without injury to themselves, walk up the hill; at the close 15 to 20 could easily do so. The patients were weighed on entering; this meant body weight; the women were weighed with a sheet $1\frac{1}{2}$ lbs. The patients were weighed once a week, chest examined once a month and pulse and temperature taken twice a day and recorded as long as they remained. This was all done in the administration tent. Any patient with a temperature 100° or above, and a high pulse, or who showed general weakness was kept on a couch, at rest, so long as these symptoms persisted. At the outset a good percentage required rest treatment; at the close only two, and these were recent acquisitions.



"Taking the cure."

The principal rule was, that under no consideration should a patient expectorate upon the ground; disregard of this meant reprimand; persistence, dismissal. Only twice this summer was it necessary to reprimand a patient for expectorating on the ground. Each patient on arriving was furnished with a small brown paper bag and squares of Japanese handkerchiefs for his sputum. The women had small chatelaine bags. These were of two parts, the outer was of denim of various shades of blue and brown, and the inner of stork sheeting, easily removed and sterilized. The outer portion could be washed and ironed, thereby sterilized. They carried their sputum bags with the moist paper, in the inner portion, and the spare papers and whatever they wished, between the inner and outer portions. Each portion was closed by a draw string. These bags were to be carried at all times. The cost of each bag was thirty-five cents and each woman patient was charged twenty-five cents or that portion which she could afford. Some could pay nothing. The sputum bags were placed in the incinerator at night and burned; a fresh supply was issued each night for use at home. On entering, the

patients were furnished with a piece of soap and a towel. These were kept in pasteboard boxes (which were donated); no box was used by more than one patient and they were kept in a closet for the purpose, outside the kitchen. The towels were washed on the grounds and a fresh one was issued each day. Blankets were provided for the cooler days.

For exercise the women set the tables and cleared them after dinner, the men wiped dishes, which were first placed in boiling water, washed, rinsed in hot water and wiped. The knives were washed and cleaned after each meal. For the rest of the time the patients sat about in reclining chairs, read, played games, or amused themselves as they wished. Books, games, magazines and daily papers were donated. The city opened a park surrounding a nearby supply reservoir, for a promenade, and this the patients greatly enjoyed.

At 9.45 to 10 the patients had a lunch of milk and bread and butter. Eggs and eggnoggs (without stimulants) were furnished for those who needed them. As 12 they had a dinner, and at 4 a lunch similar to the morning one. On colder days the milk was heated and just enough cocoa added to flavor it. They had meat four times a week, fish twice and fricasseed fowl once. In addition they had some form of potato, another vegetable, a wholesome dessert, preferably made of milk and eggs, and milk every day. Each patient consumed three to four pints of milk a day. No medicine was used except for obstinate cough, dyspepsia, constipation or diarrhea. We depended on fresh air and diet for our results.

There were 128 cases at the camp during the summer. The ages varied from 8 to 64 years and the majority were men. There were 69 males, 59 females. The ages were as follows:

Eight years, 1; 10 to 20 years 19; 20 to 30 years, 44; 30 to 50 years, 55; 50 to 64 years, 9.

We have had Irish, Germans, Russian Jews, Italians, Chinese, English, Americans, white and colored, French Canadians and Swedes. The length of time the cases remained was as follows:

Less than 1 week, 34; 1 week, 6; 2 weeks, 10; 3 weeks, 9; 4 weeks, 6; 5 weeks, 7; 6 weeks, 8; 7 weeks, 9; 8 weeks, 4; 9 weeks, 6; 10 weeks, 4; 11 weeks, 5; 12 weeks, 4; 13 weeks, 5; 14 weeks, 2; 15 weeks, 5; 16 weeks, 3; 17 weeks, 1.

The slightly advanced cases would not remain as they felt they were too well. The average daily attendance each month was as follows:

July, $27\frac{1}{2}$ +; August, 36 +; September, $32\frac{1}{2}$ +; October, not quite 35.

The attendance in July was less as our camp did not fill up immediately, and in September the low average was due to the number of rainy and threatening days we had. The greatest attendance on one day was 54, on Aug. 18. Sunday always had a smaller attendance.

There was a noticeable improvement in eating and sleeping, and diminution in night sweats from the start. The decrease in coughing, expectoration, and the improvement in the general condition, pulses and temperatures was most marked

after Sept. 1. There were 78 cases which remained 3 weeks or more at the camp (three weeks was considered a suitable basis from which to draw deductions); of these, 59 gained from $\frac{1}{2}$ to 20 $\frac{1}{2}$ lbs.; 19 lost from $\frac{1}{2}$ to 9 lbs. The maximum gain was 20 $\frac{1}{2}$ in 17 weeks, the maximum loss was 9 lbs in 9 weeks. Other gains were 16 $\frac{1}{2}$ lbs., 11 $\frac{1}{2}$ lbs., in 4 weeks, 10 $\frac{1}{2}$ lbs. in 7 weeks, 14 $\frac{1}{2}$ lbs. in 8 weeks, 11 $\frac{1}{2}$ lbs. in 9 weeks, 11 lbs. in 11 weeks, 15 $\frac{1}{2}$ lbs., 12 $\frac{1}{2}$ lbs. in 12 weeks, 12 $\frac{1}{2}$ lbs. in 13 weeks, 15 lbs in 15 weeks and 10 $\frac{1}{2}$ lbs. in 16 weeks. Fully one third showed some improvement in lung condition and will be able to pass a more comfortable winter. Some 5 or 6 will be able to do light out-door work this winter, more probably will do so, but ought not. Ten cases were sent to the State Sanatorium at Rutland, 9 of whom went; some were accepted before coming to us and were awaiting a vacancy; some were refused and then, after remaining with us a short time, were accepted. One case improved so much it was not considered necessary for her to go to Rutland. Two cases improved sufficiently so that they could go home to Ireland. There has been only one hemorrhage case and he had four at the camp, all comparatively slight, and for the last three weeks of his stay (until the camp closed) no blood at all. He was having hemorrhages when he entered and was taken in order to remove him from his unfavorable home surroundings. He was sent and returned each day by his employer. There were several cases of streaked sputum. One case developed a pneumothorax and was sent to a hospital.

As one would naturally expect from this class of cases, 3 became too ill and were sent to a hospital; 9 died at home, 8 from the disease and 1 from other causes (he was improving as to his lung condition).

The cost of the camp was about \$1,300, namely, fixtures and furniture. The cost of the maintenance of the camp was about 60 cents per day, per patient, for 40 patients, and this is reduced 12 $\frac{1}{2}$ cents per day, per patient, if you exclude the cost of the wagon. The camp was supported by voluntary contributions; each patient paid 25 cents per day or that fraction which he could afford. About one seventh paid something, while the majority were not able to pay more than their car fares.

The efforts of the physician and nurses were largely devoted to the instruction of the patient in preventing the communication of his disease to others, and every detail of the camp life on this side was watched with the greatest care. During the summer several simple talks on hygiene were given by one of the physicians from the tuberculosis department of the Boston Dispensary. Such a camp as the above is in no way to be compared with a properly equipped sanatorium, but it admirably supplements the treatment given at home by physicians or the hospitals to a large class of consumptives who cannot be in a sanatorium.

I am indebted to Dr. F. R. Tower and Dr. G. W. Hall and to my nurses for their valuable

assistance, and especially to my matron, Miss S. F. Robbins, to whose excellent management and kindly interest in the patients, the success of the camp was in a large measure due. I also desire to express my appreciation for the kindness which the Boston Dispensary showed us in furnishing the record blanks and in willingly filling prescriptions, thereby enabling the patients to obtain their necessary medicines at a small cost, or free if they were unable to pay. The consulting staff of the Camp was Dr. E. O. Otis, Dr. F. I. Knight and Dr. H. C. Clapp.

Clinical Department.

A REPORT OF SEVENTEEN CASES IN OPEN-AIR TREATMENT FOR SURGICAL TUBERCULOSIS IN CHILDREN.*

BY JOHN D. ADAMS, M.D., BOSTON.

Much has been said and written relative to the open-air treatment for tuberculosis, and we are justified in claiming its efficacy from the success already attained in the many sanitariums established throughout the country. The satisfactory results of these institutions for the treatment of tuberculosis in general have given us the assurance to try the same thing for surgical tuberculosis, which I think we may consider to be a local manifestation of a constitutional disease. I shall not attempt a paper on the subject of "Surgical Tuberculosis," which was so completely discussed in Dr. H. L. Burrell's recent article on the subject, and which did so much to stimulate us to our present work. It is only very recently that such work has been begun with children, and this paper is offered supplementing the foregoing article, merely as a report on seventeen cases in the convalescent stage of hip and spinal tuberculosis taken at random from the wards of the Children's Hospital.

Six of these cases were complicated with abscess, opened and drained.

All but three were able to be up and about with apparatus; these three were on go-carts.

All showed diminished hemoglobin ranging from 5% to 25%, a general condition very much below par, manifested by loss of flesh, indifferent appetite, lack of energy and absence of satisfactory improvement in local condition, those with abscess formation showing the characteristic persistent sinus with profuse discharge.

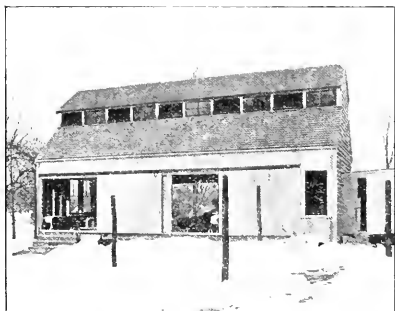
So far as was possible the cases selected were those which had been under treatment for periods varying from six months to a year or more, showing the indifferent unsatisfactory results obtained by the ordinary methods we are obliged to pursue with the poor ignorant patients, who, by force of circumstances, surround the children with conditions most favorable to the growth of the tubercle bacillus.

The mere suggestion of exposing such children, ranging from four to twelve years, to the cold

*Read at the meeting of the Suffolk District Medical Society, Oct. 28, 1905.

air, and obliging them to sleep in a temperature of 20° met with the severest opposition. But suffice to say that plans for a so-called "shack" were submitted and accepted, and in December, 1904, a building of the following brief description was completed at Wellesley Hills, eight miles out of Boston.

The building is 40 ft. x 20 ft. supported on cedar posts 2 ft. from the ground, double floor, with heavy paper between the floors, 8 ft. studding to the first pitch in the roof, which was approximately 9 ft. Rising from this perpen-



dicularly was a 2-ft. studding, which supplied a row of windows on either side. Another 4-ft. pitch to the ridge pole finished the roof. This roof was shingled with paper underneath. The sides of the building were fitted with sliding doors which made it possible to open 20 ft. of either side at a time. These doors were supplied with windows as were the ends. A 10 x 6 room, fur-

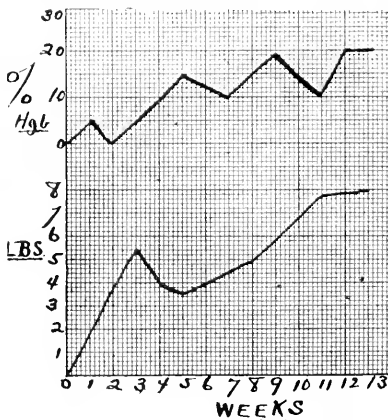


nished with a glass door, was partitioned off at one end to enable the nurse in attendance to sit and be comfortable. The windows at the top were so arranged as to prevent any direct draught. The building had a capacity for twenty cots, and the temperature was regulated to 20° by two ordinary coal stoves. The children at night were supplied with sleeping bags and flannel nightgowns with caps attached and draw strings at the bottom. It was specified that the children should have no medicine, live on a plain, whole-

some diet, and subjected to continuous treatment for from six to eight weeks. They were under the careful observation of the Drs. Dane, Stone and Thorndike, whose directions were most carefully and efficiently carried out by Miss Brooks, the superintendent of the Convalescent Home.

The following results shown in the accompanying chart, for which we have to thank Dr. F. H. Lamb for his careful and efficient work, shows the composite curve of the weekly records taken by him.

On admission the following points were noted: (1) General condition (color, appetite, activity); (2) weight; (3) hemoglobin; (4) local condition (chiefly as to sensitiveness of hip or spine and as to condition of sinus, if any).



The curve below represents the increase in weights, the one above the increase in hemoglobin.

It will be noted that in the weight curve we have a very rapid rise in the first two weeks, which is to be explained by the rapid gain of one case of sixteen pounds in two weeks. I think that we are justified in saying that the average gain in both weight and hemoglobin is very satisfactory considering the short time and the character of the cases. A careful analysis of the results shows the depressions in the curve were caused by the slow gain in those cases complicated with abscess and the three on the go-carts, and it is interesting to note that in three instances we were obliged to send cases to the hospital for surgical interference in the sinuses, and on return the records show a very perceptible loss in both weight and hemoglobin, while at the hospital for a period of a week, which fact would, of course, bring down our average. We, of course, have no way of recording the improvement in general and local condition, and that you will be obliged to accept my personal statement for. We have no hesitation in saying that every case showed the most gratifying results as to appetite, color and activity. And in one case a persistent sinus closed completely and remained

so. We also found that the abscess cases gained in hemoglobin, but very little in weight, showing the constant drain of a discharging sinus.

We were fortunate in having one of the severest of New England winters. The first night the thermometer dropped to 5° below zero, but I am happy to say that we had no frost bites. It was extremely gratifying to see the eagerness with which the children accepted this as a novelty, and we were flooded with volunteers for the "shack." The mental condition is always an important factor in the treatment of this disease, and the child's ignorance of its true condition, together with its resources for amusement, are important aids and prove the child to be a well adapted subject for this form of treatment. The children had a moderate amount of sunshine, but no special attempt was made to get it; and I might say that with reference to sunlight, while in Porto Rico this winter, I was struck with the prevalence of tuberculosis among the natives, who live in the open air and bask in the sunlight all day. This to me is satisfactorily explained by the fact that at twilight they shut themselves up ten or twelve in a dirty, filthy hut, absolutely devoid of fresh air.

I think we may draw the following deductions from our investigation:

(1) That the results are sufficiently gratifying to adopt the shack treatment for the basis of our new convalescent home, where we shall have a capacity for one hundred and fifty children.

(2) That in the past we have been prone to treat our cases too much like "hot-house plants"; that a constant supply of fresh air is an essential factor in the treatment of surgical tuberculosis; in other words, they should be exposed for the full twenty-four hours.

(3) That sunlight is an aid, but not an essential.

(4) That the average case should be subjected to this treatment for a period of not less than six months to produce satisfactory results.

(5) That ambulatory cases do better than inactive, and that those complicated with abscess should be carefully watched, drained freely and subjected to more prolonged and strenuous treatment.

(6) Climate is no specific, as we had tuberculosis in the cold north and in the tropics.

(7) That this treatment is only for convalescent cases and not those in the acute stage, as shown by the lack of improvement in the more acute cases.

In conclusion, we might say that these results are corroborated by the enthusiasm of the parents in each case over the improvement in their children, and we constantly hear the appeal of "When will you send my child to the shack?"

I fully recognize the incompleteness of this report, and we have failed to record many points which our limited quarters prevent us from so doing; but I see no reason why this work should not open up a large field for the treatment of all convalescing children, with a depleted general condition, and solve a heretofore difficult problem at a minimum of expense.

Medical Progress.

RECENT PROGRESS IN LARYNGOLOGY.

BY A. COOLIDGE, JR., M.D., BOSTON.

(Concluded from No. 2, p. 46.)

THE RELATION OF ASTHMA TO DISEASE OF THE NOSE.

A discussion of this subject in the British Medical Association was opened by Macdonald.¹⁰ In his paper he says that while we believe that asthma of long or short duration is often cured by treatment of the nose, we can neither ourselves offer explanation of the fact nor can the physiologist help us. Even if the latter can artificially excite symptoms of asthma by stimulation of the mucous membrane, he brings us no nearer a working theory and adds little or nothing to the value of our clinical observations. That the removal of any obstruction whatever in the nose or naso-pharynx may result in the cure of asthma whether spasmodic or catarrhal is well substantiated. The most favorable form of obstruction is hypertrophy of the erectile tissue especially the anterior extremities of the inferior turbinates. Also some cures have followed the removal of an irregularity of the septum causing pressure or obstruction to easy breathing. Less favorable than these in regard to the results of treatment is the affection called adenoids. Although asthmatics with polypi are greatly relieved by operation, and their general condition improved, the prognosis as regards their asthma is singularly uncertain, especially when polypoid degeneration has involved the ethmoidal region. Where there is no obstruction the treatment of unhealthy mucous membrane may help cure the asthma. In the case of edema the galvanocautery may be used with good results, especially over the upper part of the triangular cartilage.

In hay fever and hay asthma, even when there is no edema, good results may follow the cauterization of this region. The author was inclined to agree with the observations of Francis, that most cases of asthma were benefited by cauterizing this region, even when the nose is apparently normal, although it may first be necessary to remove some obstruction.

West¹¹ was by no means so optimistic, and agrees with the experience of Sir Felix Semon, that though relief may be given in a few cases, the prospects of cure are small.

Francis¹² argued that it is not yet known how far or in what manner a nasal lesion is responsible for asthma, and consequently progress in treatment is slow. It is uncertain whether good results are due to the restoration of normal breathing, or to the removal of sensory irritation. Asthma is comparatively rare in cases of marked nasal obstruction, while the majority of patients suffering from asthma have their noses in a fairly normal condition. Asthma is sometimes aggravated by a return to free nasal breathing, or

¹⁰ British Medical Journal, Nov. 5, 1904.

¹¹ Journ. Laryng. & Rhinol., 1900, Vol. 10, p. 100.

¹² Ibid.

by the removal of polypi. He is confident that the chief reason why operators so frequently fail to relieve asthma is that the one idea of treatment is to remove an irritation causing the asthmatic condition. He believes all asthma depends upon a condition corresponding to that inhibition of exchange which is dependent upon the respiratory center, and the stability can be affected by nasal treatment. Otherwise, it is hard to understand how gastric, cardiac, hereditary and other apparently characteristic forms of dyspnea can be relieved by nasal treatment or why these results are most easily obtained when the nose is apparently normal.

HAY FEVER ANTITOXIN.

During the two years in which the antitoxin of Dunbar has been in the market, no unanimity of opinion as to its value has been attained; neither has the theory of the etiology of the disease upon which it is based received due consideration. The original antitoxin was produced by the injection into horses of a toxin derived from the pollen of the gramineæ.¹³

In a recent address Dunbar,¹⁴ in addition to reviewing the subject of this antitoxin, describes his present position in regard to the American or autumn form of hay fever. The European hay fever he considers the same as that which in America is called rose cold or the June form, both of which he thinks are due to a toxin contained in the pollen of grasses. These do not bloom in August, whereas the rag-weed and golden rod, purely American flowers, have long been suspected of being the irritating cause of this autumnal catarrh. Some persons suffer both in spring and autumn, but in most cases the periodical attacks are limited to one season. The author has found an albuminous substance in the pollen of rag-weed and golden rod, which is probably identical in the two, but differs from that of the grasses. With this toxin he has been able to produce the characteristic symptoms in Americans who suffer from the autumnal hay fever, while it is innocuous in others. In Europe, also, some persons are affected by it, although never having lived in the neighborhood of the flowers they have never had autumnal catarrh.

From this toxin an antitoxin was produced. The author himself, having always had violent symptoms of hay fever when in America in August, proved the efficacy of this antitoxin upon himself recently while in this country. Why the toxin of hay fever should react with certain individuals and not with others is, so far, a matter of speculation only. The author appears to doubt the cases which react in a similar manner in the presence of horses and cats, and to think that these animals have in some way covered themselves with pollen.

THE INVOLUTION OF THE PHARYNGEAL TONSIL.

The disappearance of the pharyngeal tonsil is the subject of a paper by Goerke,¹⁵ who concludes

that involution takes place when the function of the gland has become superfluous. It is not in itself a process which confers immunity nor is it under normal conditions associated with any pathological processes, but it may be looked upon as the result of an immunity which has been acquired in other ways against certain diseases, especially the infectious diseases of childhood. The histological changes consist in the disappearance of the functionally active elements, the follicular tissue. After the involution we find the histological appearance of normal mucous membrane. Failure of involution is the result of past or present inflammation of the mucous membrane of the upper respiratory tract, and especially of the tonsil itself. The microscopic appearances of adenoid vegetations in adults differ from those in the normal pharyngeal tonsil in changes dependent upon these inflammatory processes. As we are not able to bring about involution of this structure in adults by conservative methods, it should be removed by operation.

THE FUNCTIONS OF THE TONSILS.

A contribution to this subject by Wood¹⁶ records the result of his microscopic study of the tonsils, and contains some interesting suggestions based thereon. The tonsils in common with all adenoid tissue, hold the property of producing lymphocytes in the secondary nodes or follicles. It occurred to the author that it might be possible that the tonsil not only reproduces lymphocytes by division of the old or mother cells which have migrated from the blood vessels into secondary nodes, but that this organ gives rise to original or young leukocytes by metachemism, that is, it forms them out of other tissue. Is it possible for the epithelium lining the crypts of the tonsil to be directly converted into leukocytes? The author believes that this question is to be answered in the affirmative. The strongest argument against the theory of leukocytic primogenesis as the function of the tonsillar structures of the throat is that the idea is too revolutionizing. It suggests the possibility of interchange of cell types; that no distinct line can be drawn between the epithelial cells, connective tissue cells and endothelial cells. As far as the tonsils are concerned if we accord to them the function of leukocytic primogenesis their presence in the human economy is beautifully explained. The leukocytes are intimately connected with various tissue changes, and the tonsils are largest and most fully developed at the time of life when tissue change is most active, namely, in childhood. The thymus gland developing early in embryonic life gives rise to the first leukocytes, and as this gland atrophies the tonsillar tissues develop, carrying on its function. Also it seems very possible that all adenoid tissue which has developed in intimate relation with epithelium is playing a rôle very similar to that accorded the tonsils. May it not be that the solitary follicles of the gastro-intestinal tract, the adenoid tissue of the appendix, and like struc-

¹³ See BOSTON MEDICAL AND SURGICAL JOURNAL, Feb. 18, 1904, p. 186.

¹⁴ Annals Otol., Rhinol. and Laryngol., June, 1905.

¹⁵ Archiv. für Laryngol., Bd. xvi, Hft. 1.

¹⁶ Univ. Penn. Med. Bul., Oct., 1904.

tures are carrying on the work in the adult which the tonsils of childhood had usurped from the thymus of prenatal life.

HEMORRHAGE AFTER TONSILOTOMY.

This is a subject of interest to all who may be called upon to operate upon the tonsils. Serious bleeding either at the time of the operation or at varying intervals after, is common enough to deserve and to receive consideration in our textbooks and literature. Without offering anything new Heuking¹⁷ draws conclusions from his own experience and from recently published lists, especially from a series of 150 cases collected by Damianos and Hermann. Among the causes often ascribed for hemorrhage the author believes that hemophilia, or wounding of either carotid or an anomalous vessel, are very rare causes of this comparatively common accident. The tonsillar artery is seldom injured nor even its larger branches, unless the extirpation is very radical. Obstinate bleeding seldom comes from the stump of the gland, but generally from some wound of the anterior or posterior pillar. In the majority of the author's cases the upper portion of the posterior pillar was the source of the bleeding. This is accounted for by the fact that in gagging the posterior pillar is pushed into the guillotine. This instrument has the disadvantage that the cutting is seldom done under as accurate observation of the parts as with other instruments. After tonsilotomy a patient should be kept for a considerable time in a sitting position and no fluids collecting in the throat should be swallowed. In regard to treatment the author is surprised that such means for stopping the bleeding as astringent and cauterizing fluids and powders should be so often recommended, or complicated and difficult manipulations such as suturing or the use of elaborate instruments. The most satisfactory method is by digital compression.

The bleeding point should first be found and it can then be controlled with certainty. In rare cases it may be necessary to take more radical measures, such as tying of the carotid, but generally the bleeding will stop within a few minutes under light pressure with the finger wrapped in gauze.

PHARYNGO-MYCOSIS AND HYPERKERATOSIS.

In a thesis on the mycoses of the upper respiratory tract Sendzick¹⁸ discusses the different opinions on the etiology of the condition commonly known as pharyngo-mycosis or more recently as hyperkeratosis lacunaris. The latter name was suggested by Siebenmann who considered that a cornification of the lacunar epithelium was the primary condition and limited the role of the *Leptothrix buccalis* in the disorder to that of a simple saprophyte. To this the author does not agree but believes that it is a typical mycosis caused by this organism. The localization is principally in the crypts of the tonsils, it may, however, occur anywhere in the upper respiratory

tract. The author does not believe that treatment is superfluous, but recommends puncturing the crypts with a sharp cautery, and the application of trichloroacetic acid.

The opposite view is upheld by Onodi and Eutz.¹⁹ If we consider that the leptothrix grows in every throat and that it is especially luxuriant when the epithelium is pathological, also that all attempts at transplanting the disease have failed, it is probable that the plant has pathological properties. In substituting the name "hyperkeratosis" it is true that the etiology still remains in doubt, although not more so than in a similar disease of the skin.

Onodi believes that his work shows that Siebenmann's theory, that the cornification of the epithelium is the essential process, is maintained, but suggests that for the less marked cases the word "keratosis" might be substituted.

STOVAIN.

Dubar²⁰ recommends the use of stovain as a local anesthetic. He has found it effective, and superior to cocaine in being non-poisonous and cheaper. It is best used in from ten to twenty per cent solution in water or solution of bicarbonate of soda. It has been said to dilate the blood vessels, but the author has not found this to be the case.

Reports of Societies.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

THIRTY-FIRST ANNUAL MEETING, HELD AT INDIANAPOLIS, IND., OCT. 10, 11 AND 12, 1905.

THE president, DR. BRASSFORD LEWIS, of St. Louis, Mo., in the chair.

Addresses of welcome were delivered by MAYOR JOHN W. HOLTZMAN, on behalf of the city of Indianapolis, and by DR. W. N. WISHARD, on behalf of the local profession, which were responded to by DR. H. O. WALKER of Detroit.

The scientific work was divided into two sections, medical and surgical.

SURGICAL SECTION.

SURGICAL DRESSING.

DR. CARL E. BLACK, of Jacksonville, Ill., presented a preliminary report on the technique of the after-dressing of surgical cases. He pointed out briefly the principal elements necessary for the proper dressing of a wound, whether it be a surgical or an accidental wound. While the technique differed somewhat in different kinds of wounds, the fundamental principles were the same in all. Such a consideration divided itself into

1. The patient. Certain modifications must always be made to suit the individual case. 2. Those things which were auxiliary to the dressing itself, but which did not come in contact with the wound. 3. The surgeon or nurse making the dressing and his or her assistant. 4. The instruments, dressings and solutions coming in contact with the wound. Septic wounds should be so dressed that there was no opportunity for a further mixture of infection with the wound.

¹⁷ *Archiv. für Laryngol. und Rhinol.* 1904, 17, 105, 1.

¹⁸ *Journal. Laryngol., Rhin. and Otol.*, Nov., 1905.

¹⁹ *Archiv. für Laryngol.* 4, 1905, 10, 255.

²⁰ *Progress Med.* 5, 26, 1, 1905.

nor any opportunity for the infectious material from the wound to in any way be scattered where it could come in contact with other wounds. These two points should always be the basic principles of a surgical dressing, and should always be kept prominently in mind by those undertaking the dressing of wounds. To facilitate dressings and to economize in materials, and at the same time carry out a thorough technique, the author had arranged and had been using for some time a plan which had proved quite satisfactory. He had devised a box which contained everything that might come in contact with the wound, and everything, excepting the instruments, could be purchased in ordinary stores of towns and were not expensive. This plan was described in detail.

DR. JOHN YOUNG BROWN, of St. Louis, Mo., thought the secret of the success of the essayist in dressing wounds was due largely to the thorough system he had inaugurated. System was everything in surgery, as in business.

DR. O. H. ELBRECHT, of St. Louis, Mo., said the sooner surgeons reached a standard in the sizes of dressings, in tapes, squares, oblongs, etc., the less confusion there would be on part of the surgeon in going from one hospital to another to do surgical work. He mentioned the plan adopted by him in the hospital with which he was connected.

DR. C. E. RUTH, of Keokuk, Iowa, said that the sooner the profession came to a realization of the needs pointed out by the essayist, the less confusion there would be, as well as lessening very materially the liability to infection.

DR. MILES F. PORTER, of Fort Wayne, Ind., said the keynote of success in the management of surgical cases was system and simplicity. One should attempt to do away with the necessity of dressing wounds until they were healed in all cases where this was possible. The essayist spoke of there being no necessity for dressing an aseptic wound until the stitches had been removed. The speaker said there should be no stitches to remove in the ordinary aseptic wound, no matter where it was located, and in the ordinary treatment of septic cases the rule, as it prevailed in his judgment, made necessary a great deal more subsequent dressing than was called for. The dressing of a wound after it was made should be looked upon as an evil to be avoided as far as possible. He illustrated this point.

Dr. Black, in closing, said that the gist of the whole matter was system for the purpose of saving time, of safety for the patient, and for the purpose of economy.

CURETTAGE IN SEPTIC CASES.

DR. C. E. RUTH, of Keokuk, Iowa, stated that prevention must always be the most important treatment and must always include hygienic asepsis of the patient and physician and great care in examination. No instrumentation in any variety of puerperal sepsis should be considered which denuded the uterine mucosa and opened up tissues not in any sense protected from septic infection, the utmost gentleness being used to avoid any possibility of puncturing the softened or disintegrated uterine wall. The curette should never be used in such cases, certainly not a small or sharp one, and then only in the least serious of these cases, namely, saprophytic intoxication, which was not sepsis. He had for many years been satisfied with a placental detachor of his own device, which answered every purpose with a minimum danger of perforation. Streptococci and staphylococci were the most serious of puerperal infections, as these, on the manifestation of symptoms, passed beyond all possible reach of removal by any form of curettage. While curettement could do no good, it might do much harm in disseminating

infection and in causing uterine perforation. Within the last two and a half years the author had operated upon four cases of puerperal sepsis which illustrated the dangers of curettage. These cases were reported in detail.

DR. O. H. ELBRECHT, of St. Louis, Mo., thought that many deaths were due to the curette being used in cases of septic uteri. It was just as criminal, in his judgment, to introduce a curette into a septic or infected uterus as it was a sound or curette for the purpose of producing criminal abortion. He mentioned one case in which a physician curetted a uterus contrary to his advice, and the next day the patient died. He mentioned two other cases of sapremia that terminated fatally from what he believed to be curettement of the uterus.

DR. H. O. WALKER, of Detroit, said the paper was timely, and one could not condemn too strongly the indiscriminate use of intra-uterine curettes and irrigators. Many deaths were undoubtedly due to the indiscriminate use of these instruments.

DR. JOHN YOUNG BROWN said that while the indiscriminate use of the curette was dangerous, it nevertheless had an important function to fulfill. Where there were decomposing membranes or fragments of retained placenta, the uterus should be cleaned out.

DR. HANNAH M. GRAHAM, of Indianapolis, related her experience in treating the class of cases under discussion. She used an applicator, and not a sharp or dull curette. Cotton was wrapped around the applicator, which was saturated with carbolic acid, and the debris left in the uterus was swabbed out. It was her practice, too, to use a fenestrated catheter as a drainage tube, through which peroxide of hydrogen was injected every two to three hours, either by herself or the nurse, and she had had good success by this method.

DR. A. M. HAYDEN of Evansville, Ind., concurred in the remarks of Dr. Brown. When a physician was called to see a patient whose uterus contained a broken-down fetus or fragments of placenta, if he failed to clean out that uterus he thought he was criminally negligent. Patients went on for weeks with elevation of temperature due to sepsis, and would not get well without the judicious use of the curette, while if the uterus was cleaned out the patients would recover in a short time. He advocated the use of placental forceps for removing debris or pieces of retained placenta without disturbing or breaking down nature's protection.

DR. THOMAS B. NOBLE, of Indianapolis, uttered a word in defense of the uterine curette, saying it was an instrument for prevention as well as cure. The proper way was to interpret the pathology that one had to contend with, remembering that the curette was a means to an end. If a woman was suffering from high temperature, rapid pulse, prostration, due to saprophytic material in the uterus, which could be removed by mechanical means, the physician did her an injustice if he left the uterus alone, simply trusting to the *vis medicatrix nature* to take care of it.

DR. G. FRANK LYDSTON, of Chicago, said he did not believe that the essayist, nor those who spoke so emphatically in condemnation of the curette, would fail, as a matter of practice, to differentiate between the post-abortive septic phenomena met with and the post-puerperal septic phenomena. He did not believe that any of the gentlemen intended to convey the idea that the curette was to be condemned and never to be used. If one were called to see a woman who had been suffering from general sapremia for several weeks, who was in such a condition that it was evident dissolution was not far away, if something was not done, if the history was such that material had been left behind in the uterus, and she was having a temperature of 106°, he

would certainly not treat such a woman surgically or provide drainage by way of the vagina through the medium of vaginal irrigation, but would remove the septic material from the uterus. If this were not done the case was doomed, and many women in such a condition recovered under proper intrauterine treatment.

Dr. A. H. Ferguson, of Chicago, mentioned a case that terminated fatally on account of meddlesome interference on the part of a physician.

Dr. Ruth, in closing, said he thought a good deal of the discussion arose from a misunderstanding or failure to differentiate between the different varieties of infection that one had to deal with. There was no danger from a careful curettement in a case of putrescent uterus in which there was not added to the intoxication or septicemia a septicemia.

ARTIFICIAL HYPEREMIA IN SURGERY.

Dr. ALEXANDER C. WIENER, of Chicago, pointed out the indications for this treatment in surgery, as follows:

(1) Subacute mild inflammations of joints and soft tissues were relieved rapidly. (2) Acute purulent inflammations of soft tissues either on the extremities or the head. (3) Acute and subacute inflammations of joints and purulent arthritis; gonorrheal infection of joints. In these cases the elastic bandage had to be applied in such a manner as to produce energetic venous stasis, without causing pain to the sufferer. In acute inflammations comparatively light constriction produced an immense hyperemia. This conclusively showed that the arterial blood was not diminished but slackened. Cases were cited in which excellent results were obtained by the Bier method.

SURGERY OF THE GALL BLADDER AND ITS DUCTS.

Dr. H. O. WALKER, of Detroit, Mich., related his experience with 185 cases upon which he had operated. He quoted from a former paper written by him years ago, saying that what he said then still obtained to-day. *First*, jaundice, which heretofore had been regarded as almost pathognomonic of the presence of gall-stones, was present in only about 20% of all stone cases. *Second*, that pain in the region of the gall bladder did not by any means indicate the presence of gall-stones, but was quite as often the result of a kinking of the cystic duct from lesions the result of one or more attacks of cholecystitis combined with pericholecystitis. *Third*, the passage of stones in the biliary was not as common as was formerly supposed, for colics were rarely successful in passing a stone from the gall bladder. *Fourth*, empyema of the gall bladder was not always felt by palpation, for frequent attacks of cholecystitis tended to diminish the size of the gall bladder. *Fifth*, tumors of the gall bladder without pain or jaundice indicated a simple dropsy, while a painful, distended gall bladder indicated empyema, and when accompanied by jaundice indicated constriction of the choledochus. *Sixth*, a hard, nodule, painful tumor of the gall bladder, with or without jaundice, was almost certain evidence of carcinoma. *Seventh*, obstruction of the choledochus, accompanied with inflammation and jaundice, quickly disappeared after the passage of the stones into the papilla of the duodenum.

Cholelithiasis was of greater frequency than was supposed. Approximately every tenth individual had concretions in the gall bladder, yet only about one in twenty ever complained of their presence, so that most stones needed no treatment. It was only the cholecystitis and cholangitis which made manifest the irritable presence of gall stones without demanding treatment, namely, medicinal and surgical.

The conditions that required operative intervention were: (1) An acute sero-purulent cholecystitis and

accompanying pericholecystitis. (2) Persistent and frequent pains due to adhesions between the gall bladder, intestines, stomach and omentum. (3) Chronic obstruction of the common duct. (4) Chronic empyema of the gall bladder and its accompanying accidents.

Cholecystectomy was undoubtedly advisable where the gall bladder had been subject to frequent attacks of inflammation, and where chronic septic conditions existed.

The author reported an interesting case in which he removed the gall bladder and fixed the right kidney.

RETROPERITONEAL TERATOMA.

Dr. C. M. NICHOLSON, of St. Louis, Mo., read an interesting paper on this subject.

The tumor described was a teratoma of the abdominal cavity, remarkable not only because of its rare occurrence, rapid growth, and total absence of symptoms until three weeks before death, but because with its substance had been found a chorion epithelioma. The following is a report of the author's case:

Aug. 5, 1905, he was consulted by C. W., a healthy-looking, well-developed young man, twenty-one years of age, who complained of one symptom, fainting, which had occurred twice during the preceding week. He had attended to his business until Aug. 4, when he quit work, fearing an accident during his trips as superintendent down in the mine. Upon inspection, the abdomen appeared normal; pressure over the region of the gall bladder enabled the examining finger to outline a pear-shaped body. In the median line beneath the rectus abdominis, extending from a point four inches above the pubes to the lower margin of the right lobe of the liver, was an immovable mass of definite form. The line of dullness was continuous between the pear-shaped body and the mass in the median line. Although the growth measured four inches in width, no intestinal disturbance had resulted. Three weeks later patient vomited and complained of great pain after eating. The vomiting became more frequent and the pain more severe with each succeeding day. He saw the patient Sept. 3, and the following morning made an exploratory incision, revealing a growth extending from the right kidney to the last dorsal vertebra, thence downward to within two inches of the pubes. It was firmly attached to the median line posteriorly and to the kidney externally. The posterior peritoneum was cut through and the mass found to be enclosed in a fibrous capsule, which was sewed to the anterior layer of the peritoneum and a portion of the growth removed. The patient sat up at the end of the first week, but continued to complain of great pain. He died two weeks after the operation.

Post-mortem examination was made by his assistant, Dr. S. J. Stahl, whose report in part was as follows: "On opening the cavity of the abdomen and cutting through the posterior peritoneum and fascia transversa, a fibrous capsule enclosing a semi-solid mass and adherent only in the median line and to the right kidney, was found. Not without much difficulty could the tumor be removed, so intimately was it attached to the structure anterior to the vertebral column. The abdominal aorta from the first dorsal vertebra to the fourth lumbar was closely attached to the growth. The gall bladder was distended evidently due to pressure on the common duct. Neither the lumbar glands nor the kidneys were enlarged, although the right kidney was adherent to the tumor. The liver, though very slightly enlarged, showed evidence of involvement. The heart and pericardium were normal. The lungs contained two or three lined nodules."

The tumor weighed a little less than two pounds. It was right-angled and lobulated, the lobules being smooth and extending in different directions. On cutting, the tumor was soft, the anterior inferior extremity being partially cystic. Some of the cysts were as large as a hazel nut. The remainder of the growth appeared solid. The outer surface of the tumor was covered with a distinct fibrous capsule. Paraffin section of the Zenker fixed tissue showed a very complicated mass. Portions of organs were found corresponding in embryonic origin to all the germinal layers. Skin, cutaneous organs, central nervous system, peripheral nerves, represented the epiblast. Mucous glands, tubes, cysts with epithelial lining, were indicative of the hypoblast. Bone, cartilage, fibrous tissue, constituted the mesoblastic structures.

The author considered at length the different theories advanced in the past to account for the origin of teratomata.

DR. JOSEPH RILEY EASTMAN, of Indianapolis, said he had had a remarkable experience in relation to tumors of this character. He had had two cases of complete precececal teratomata, but he had not had such a case as the one related by Dr. Nicholson. The speaker's cases were simply instances of precececal teratomata; they were not cases of inclusio fetalis which Dr. Nicholson had reported. In the first there was presented the clinical picture of a complete external fistula in ano. Long hairs protruded from both orifices, but when the roof of the canal was split up it developed that there was quite a cavernous space there which was lined with epithelial membrane, and this proved to be in either case a precececal teratoma or dermoid.

Dr. Eastman related a case in which his father had removed almost a complete skeleton from the abdominal musculature of a man in middle age.

Dr. Nicholson, in closing, stated that chorion epithelioma occurring in a case of retroperitoneal teratoma was extremely rare, and so far as a search of the literature was concerned, he had been unable to find a similar instance. Examination of the microscopic slides demonstrated clearly the presence of tissues from the three germinal layers.

SOME OF THE FALLACIES IN THE CLINICAL DIAGNOSIS OF GONORRHEA.

DR. G. FRANK LYDSTON, of Chicago, discussed some of the more dangerous of the fallacies in the diagnosis of gonorrhea, with especial reference to prognosis as regards the infectiousness of a given individual to other and healthy persons with whom he or she might come in sexual contact. He considered, first, the possibility of excluding infectiousness in the case of a woman under suspicion, or who was known to have had gonorrhea. That the most dangerous type of infection of the female was that in which the external manifestations of the disease were absent, or wanting, was coming to be well understood by both gynecological and genito-urinary specialists. The explanation of the relatively great danger of infection of others by such subjects was not so thoroughly understood as it should be. Gonorrheal urethritis in the female, when it had assumed the chronic form, might present no secretion whatever upon external examination. There might be little or no vaginal, cervical or uterine discharge, and even such as there was might upon examination fail to disclose the micro-organisms of gonorrhea. A swab or probe passed into the urethra might return perfectly clean. Notwithstanding this apparent lack of infection in the urethra, the mucous glands might be involved, and under the influence of

sexual excitement and the mechanical effect of coitus the physiological hypersecretion might convey to the meatus gonococci in abundance. The result was sufficiently obvious.

The author presented clinical facts which would seem to make it impossible for a physician to state in any given case that a woman was free from infection. This was one of the strongest arguments against regulation and medical inspection of prostitutes. He entertained serious objections to the medical profession constituting itself an assurance society for the protection and promulgation of the social evil, but aside from this scruple, there remained the fact that no reliable system of inspection or examination could be devised.

The author was firmly convinced that in many cases of infection of healthy women by a latent gonorrhea of the husband, mixed infection was responsible, and the resulting pathological condition in the female was non-specific. Its being non-specific, however, did not preclude the possibility of its becoming very serious.

The author thought that we had no tests at the present time which would enable us to give a positive opinion of the infectiousness of a given case of suspected latent gonorrhea. As already suggested, the clinical history in many cases was more important than the laboratory study of the case, and a careful combination of both methods of study was always essential. The physician should be as chary of assuming responsibility in advising a gonorrheic in the matter of matrimony as he should be in advising syphilitics under similar circumstances.

DR. W. E. WASHBURN, of Kewanee, Ill., exhibited an improved urethrotome.

(To be continued.)

Recent Literature.

The Diagnostics of Internal Medicine. A Clinical Treatise upon the Recognised Principles of Medical Diagnosis, Prepared for the Use of Students and Practitioners of Medicine. By GLENTWORTH REEVE BUTLER, Sc.D., M.D., Chief of the Second Medical Division, Methodist Episcopal Hospital; Attending Physician to the Brooklyn Hospital; Consulting Physician to the Bushwick Central Hospital, etc. Second revised edition. Illustrated. New York and London: D. Appleton & Co. 1905.

Butler's work appears in its second edition with certain minor alterations in the text and changes in the illustrations. The book in general remains one of the best types of modern work both as regards text and clearness of illustration. Diagrams are freely used and every effort has been made in this, as in the previous edition, to render clinical signs and symptoms realistic by graphic means. In this attempt the matter of illustration has been somewhat overdone, particularly in the use of photographs of a female model to illustrate various pathological points which could be done as well by a less striking form of illustration. The book will no doubt continue to occupy a useful place among its many allied treatises on the same general subject.

THE BOSTON
Medical and Surgical Journal.

THURSDAY, JANUARY 18, 1906.

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THE RELATION BETWEEN EDEMA AND THE
ELIMINATION OF SODIUM CHLORIDE.

It has become pretty well established, since the work of Widal and Juval in 1903,¹ that there is a close relation existing between the edema of certain forms of nephritis and the elimination of sodium chloride. The two forms of kidney disease in which edema is a very prominent feature are acute and chronic parenchymatous nephritis, and in these two diseases there is sufficient pathological change in the cellular portion of the kidneys to interfere with the elimination of solids, particularly sodium chloride. The theory of Widal and Juval was that when there is a retention of sodium chloride, the salt retained in the tissues requires a certain amount of water to maintain proper molecular concentration and dropsy results. This explanation of the cause of edema in nephritis is a plausible one and is worthy of much consideration.

Authorities agree that only a small amount of salt is essential to health and that amount is approximately 2 to 5 gm. The majority of people take from 10 to 20 gm., and those with the "salt habit" take 30 to 40 gm. Koziezkowsky found that although there was a wide variation in the output of sodium chloride in perfectly healthy persons—varying from 6.8 to 11.4 gm. in one case and 9.9 to 24.7 gm. in another—where they were given an additional 10 gm. of salt for three consecutive days there was a retention of it varying from 18 to 25 gm. in the twenty-four hours. There is, therefore, apparently a fixed relation existing between the intake and output of sodium chloride for each healthy in-

dividual. Accepting the theory of Widal and Juval of the cause of edema in cases of kidney disease, then any sodium chloride which cannot pass through these diseased organs will call for sufficient water to establish proper molecular concentration in the tissues.

When persons with an acute or chronic parenchymatous nephritis ingest more salt than their kidneys will eliminate, there is generally a perceptible gain in weight—accompanying the increased dropsy—apparently the direct result of the retention of a large quantity of water. The albuminuria becomes intensified and there are finally all of the symptoms of an impending uremia. In the experiments of Widal and Juval, they were able to cause an edema to appear or disappear at will by increasing or withdrawing sodium chloride from the diet of their patients.

We have added information upon this very important subject in a paper by Miller.² He studied two cases of acute nephritis, seven of chronic parenchymatous nephritis, one case of myocarditis and several patients with normal kidneys. His conclusions resulting from his observations are interesting and are as follows:

1 "In patients with moderately severe nephritis associated with edema, the ingestion of large amounts of sodium chloride is followed by a chloride retention. The patient gains in weight, the edema becomes more marked, the albuminuria increases and symptoms may develop resembling uremia."

2 "In patients with severe nephritis, and especially those with uremia, chloride retention is very marked, as scarcely any of the extra chlorides administered are eliminated."

3 "In individuals with apparently healthy kidneys, following the ingestion of sodium chloride, there is a chloride retention equal to that of mild nephritis. The individuals gain in weight but there is no visible edema, no albuminuria and no uremic symptoms appear."

The case of myocarditis with pleural effusion, ascites and general edema improved materially when there was an unusual intake of the salt, nothing was said as to the condition of the kidneys in this case but they were probably normal. This case of heart disease brings up the question as to the effect of chloride retention in cases of disease of the heart in which there is extensive edema and a mild or severe passive congestion of the kidneys but no primary nephritis. There is certainly an opportunity for research along this line and the results ought to be valuable.

¹ Presse Medicale 41.

² Journ. Amer. Med. Assoc., Dec. 1, 1903.

Observations thus far indicate that in disease of the kidneys which are associated with edema, the amount of sodium chloride ingested should not exceed 2 gm. per diem, and that intravenous and subcutaneous injections of normal salt solution should be avoided as a therapeutic measure in all such cases. Widal found that the edema disappeared and there was general improvement on a diet consisting of 400 gm. of meat, 1,000 gm. of potato, 100 gm. of sugar, 80 gm. of unsalted butter and 2,500 cc. of fluid, the whole containing only about 1.5 gm. of sodium chloride.

THE BOSTON TUBERCULOSIS EXHIBITION.

If publicity is to prove a valuable means of combating tuberculosis, there can be little question that the cause has been materially benefited by the recent tuberculosis exhibition held in Boston. Much time and thought had been expended by those in charge of the preparation of the exhibition with the result that a realistic exposition of the causes and means of prevention of the disease were given. The demonstration appealed to various classes in the community, and to persons with varying degrees of medical knowledge. The most ignorant, as well as the best informed, could not have failed to carry away some new knowledge from a few hours spent in the building. Realism was not lacking for the edification of those living in abject poverty, and the exhibition of the pathological anatomy of tuberculosis with the microscope demonstrations could not have failed to be instructive to the most advanced student of the subject. The painstaking care which had been so liberally expended in preparing the exhibition was rewarded by the somewhat extraordinary public interest which it aroused.

The exhibition was open to the public for eleven days of thirteen hours each, giving 143 as the total number of exhibition hours. During this relatively short period the entire attendance was 25,953, or an average each day of 2,359. It is also a noteworthy fact that interest increased during the progress of the exhibition. With but two exceptions, one of which was Sunday, the last day, each day showed an increase in attendance over its predecessor. The largest attendance was on Saturday, the day before the closing, with a total of 4,154. There is every reason to believe that this large attendance was representative, and that people from all parts of the city and from all classes of society, many from the suburbs, and in some instances persons from a distance

visited the exhibition. This was especially gratifying to the management, inasmuch as the main object of the exhibition was to reach the diverse classes in the community, all of whom have something to learn regarding hygienic methods of living. A feature of the exhibition, and one which, no doubt, added much to the lessons it taught, was a carefully arranged series of special meetings at which various physicians and laymen, who had knowledge of the various phases of the tuberculosis problem, addressed such persons as were present. The aggregate attendance at the lectures was 5,425. In addition to this seven lantern slide exhibitions were given, at which there was an aggregate of 2,625 spectators. In order to reach the non-English speaking part of the community a meeting for Hebrews was given, attended by 250, in which the addresses were made both in English and in Yiddish. Italian was also used in these lectures.

A comparison of the foregoing figures with those of the New York exhibition, held a few weeks previously, is interesting. Although the New York exhibition continued for fourteen days the attendance was 17,000, or a daily average of slightly more than one half of that in Boston. The reasons for this were due to many factors, one of which no doubt is that the reputation of the New York exhibition preceded that of Boston and that through the generous co-operation of the daily papers it was much more widely advertised. In all such attempts at educating the public in the future the assistance of the daily press should be sought, and we have no doubt will be gladly given. The success both of the New York and Boston exhibitions will doubtless lead to a repetition elsewhere of the same general plan. It is, in fact, announced that the money has been offered for such an exhibition in Springfield, Mass. Under proper direction, it would be possible and certainly desirable to reproduce such demonstrations, even in towns and villages. As a means of education it has certain definite advantages over spreading knowledge through pamphlets and leaflets.

MEDICAL NOTES.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, Jan. 17, 1906, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 40, scarlatina 26, typhoid fever 5, measles 102, tuberculosis 36, smallpox 0.

The death-rate of the reported deaths for the week ending Jan. 17, 1906, was 18.14.

BOSTON MORTALITY STATISTICS. — The total number of deaths reported to the Board of Health for the week ending Saturday, Jan. 13, 1906, was 198, against 232 the corresponding week of last year, showing a decrease of 34 deaths and making the death-rate for the week 17.35. Of this number 89 were males and 109 were females; 192 were white and 6 colored; 128 were born in the United States, 63 in foreign countries and 7 unknown; 45 were of American parentage, 130 of foreign parentage and 23 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 43 cases and 3 deaths; scarlatina, 31 cases and 1 death; typhoid fever, 11 cases and 5 deaths; measles, 118 cases and 3 deaths; tuberculosis, 41 cases and 15 deaths; smallpox, no cases and no deaths. The deaths from pneumonia were 15, whooping cough 0, heart disease 15, bronchitis 9 and marasmus 3. There were 7 deaths from violent causes. The number of children who died under one year was 40; the number under five years, 66. The number of persons who died over sixty years of age was 42. The deaths in public institutions were 58.

There were 3 cases and 2 deaths reported from cerebrospinal meningitis during the week.

A CENTENARIAN. — Hiram Warren of Springfield, Mass., died Jan. 14, at the reputed age of one hundred and one years.

APPOINTMENTS. — Dr. Edward S. Smith of Westfield has been appointed associate medical examiner of the Fourth Hampden District. Dr. John E. Magrath of Hudson has been appointed associate medical examiner of the Ninth Middlesex District.

THE PREVALENCE OF OLD AGE. — It is reported from the town of Barnet, Vt., which has a population of about eighteen hundred, that at the beginning of the year there were thirty-seven persons in the town over eighty years of age, in the proportion of twenty-five women to twelve men.

THE DISMISSAL OF DR. BOWDITCH FROM RUTLAND. — We have received from Dr. J. P. Rand, Secretary of the Board of Trustees of the Rutland Sanatorium for Tuberculosis, newspaper clippings giving statements of the trustees in regard to the recent dismissal of Dr. V. Y. Bowditch, accompanied by a request that they be given the same publicity as was given to our editorial of Dec. 7. This request we cannot comply with for several

reasons: The statements have already appeared in full in the daily press (*Worcester Telegram?*), where those who are interested can read them. The statements themselves are somewhat contradictory. The subject is now under investigation by an official committee to which it has been referred.

PROCTOR HOSPITAL FOR INCIPIENT TUBERCULOSIS. — At a meeting of the State Tuberculosis Commission, held in Rutland, Vt., Dec. 26, the decision was reached that the state hospital for the treatment of incipient tuberculosis, recently provided for by a gift of \$100,000 from Senator Redfield Proctor, is to be located in Pittsford.

COMMITTEE OF THE MASSACHUSETTS MEDICAL SOCIETY TAKES ACTION. — As a result of a complaint which has been filed with the Massachusetts Medical Society, the Committee on Ethics and Discipline is investigating charges alleging unprofessional conduct on the part of two members of the society concerned in the recent notorious "suit case" trial.

PROTEST AGAINST THE DISMISSAL OF DR. V. Y. BOWDITCH. — A protest against the recent dismissal of Dr. V. Y. Bowditch as physician to the Rutland, Mass., Sanatorium for Tuberculosis, signed by nearly three hundred prominent physicians of the state, was handed to Governor Douglas shortly before his retirement from office, and passed on by him to Governor Guild. Governor Guild has referred the document to the Committee on Public Charities of the Council.

CEREBROSPINAL MENINGITIS AT THE NEWPORT TRAINING STATION. — Cerebrospinal meningitis has appeared among the naval apprentices at the Newport training station. Strict quarantine regulations have been adopted, affecting not only the apprentices among whom the disease first occurred, but extending to the entire sixteen hundred stationed at this post. Portable pavilions are to be used in the care of the patients, for which a liberal appropriation has been made.

BOSTON FLOATING HOSPITAL. The twelfth annual report of the Boston Floating Hospital summarizing the season of 1905, has been published. The year's work was most successful, even though conducted under the disadvantages of an inadequate boat. The plea is again made for a larger boat for the purposes of the hospital, which will undoubtedly be gratified, and plans are given in the report. This charity is a deservedly popular one and should receive general public support.

NEW YORK.

APPOINTMENTS. — At a meeting of the trustees of Columbia University, held Jan. 8, Dr. Frank W. Jackson was appointed Professor of Clinical Medicine and Dr. Walter F. Chappell, Clinical Professor of Laryngology.

APPROPRIATION FOR TUBERCULOSIS HOSPITAL. — At the first meeting of the new Board of Estimate and Apportionment, held Jan. 12, Health Commissioner Darlington secured an appropriation of \$70,000 for the expenses of the Mount Hope Tuberculosis Hospital in Orange County.

Obituary.
EMMET COOPER DENT, M.D.

DR. EMMET COOPER DENT, Superintendent of the Manhattan State Hospital for the Insane, Women's Department, on Ward's Island, New York City, died suddenly on Jan. 12. He was born in Macon, Miss., Oct. 11, 1859, and was graduated from Bellevue Hospital Medical College, New York, in 1879. At the time of his death he was secretary of the American Medico-Psychological Society and Professor of Mental and Nervous Diseases in the New York School of Clinical Medicine. Dr. Dent's untimely death will be a very severe loss to the service of the New York State hospitals. During his incumbency as head of the institution on Ward's Island he had done admirable work, introducing, with the most gratifying success, all the most approved modern methods in the treatment of the insane. As an adjunct to the regular treatment of his patients he secured the services of a number of the best New York specialists in various departments, so that very unusual advantages were enjoyed by the inmates of his hospital. Dr. Dent also possessed so many genial qualities that he endeared himself to all who were brought into association with him.

Miscellany.
PROSECUTION OF FRAUDULENT PRACTITIONERS.

On Jan. 12, Dr. William Wallace Hadley and Mrs. Laura M. Wilson, respectively medical director and assistant medical director of the "Force of Life Chemical Company," were arrested by the Federal authorities and held in \$2,500 bail each for future examination, on a charge of conspiracy to obtain money under false pretenses by the use of the United States mails. For the past three or four years this fraudulent concern has maintained elaborate offices on Broadway, New York, and has done a very large mail business. The County Medical Society, through its counsel, Messrs. Andrews and Cooper, and the United States authorities,

have co-operated in their efforts to bring to justice the chief offenders and put a stop to circulation of the literature of the company through the mails, and the prosecution will be conducted by Assistant United States District Attorney Houghton. The action on the part of the government is said to have been personally prompted by President Roosevelt, to whom some one sent a circular of the company, among the extraordinary statements printed in which were the following: "By his mysterious control over disease and death Dr. Wallace Hadley, the eminent thauumaturgic panoplist of this city, has made the human heart beat again in the body of a woman rescued from the grave. And as a result of his successful experiments he makes the startling statement that no disease should cause death. He claims to have discovered the vital principle of life itself, the dynamic force that creates and maintains existence. Since making this discovery the cures made by this man of science have been so remarkable, the restorations to life and health that he has brought about have been so marvelous, that he is credited with possessing some power over disease and death not given to ordinary mortals. He seems to have absolute control over human life and the diseases that attack it." In order to obtain evidence against the company a number of letters were sent to it from supposed patients, and the replies preserved for use in the prosecution. One of these supposed patients to whom the fictitious name of "Lucille Hoffman" was given, was asked to send a specimen of her blood for examination. Accordingly, Mr. Cooper procured some blood from a horse and forwarded it, and shortly afterwards received a letter which declared that the examination indicated such frightful physical conditions that he wondered how the poor horse could possibly survive for a day longer. "Lucille Hoffman," after having sent in \$6.00, the cost of a four weeks' treatment, and waiting for the specified time to elapse, wrote the company that she had not been benefited and claimed the privilege promised in all its literature and correspondence, of having her money refunded. In reply there came a letter telling her in learned medical terms that she was suffering from five other complaints with long and high-sounding Latin names. No money, or promise of money, however, came with the new diagnosis. Mr. Cooper states that while the company claims to have its own well-equipped laboratory and that its preparations are the discovery of Dr. Hadley, as a matter of fact the drugs dispensed by it are procured from a New York firm of manufacturing chemists. He has had an examination made of the medicines sent as the result of the correspondence with the supposed patients, and finds that the pills furnished cost about fifteen cents a thousand, while the entire outfit of medicine sent for \$6.00 can be procured for something like 36 cents. Dr. Hadley is a graduate of the medical department of the University of Buffalo and a registered physician, but the name of Mrs. Wilson does not appear in the list of registered physicians.

THE CARTWRIGHT LECTURES, 1906.

THE Cartwright Lectures of the Alumni Association of the College of Physicians and Surgeons of New York will be given on Thursday, Jan. 25, Monday, Jan. 29, and Friday, Feb. 2, by Baron Takaki on "Military and Naval Sanitation: Experiences Drawn from the Late Japan-Russia War." Dr. Takaki belongs to one of the samurai families of the Satsuma clan, as do his contemporaries, Generals Oyama, Kuroki, Nogi and Nodzu, and Admirals Togo and Kamamura. During his youth he was sent by his government to study medicine in England, where he graduated with honor from St. Thomas's Hospital School, studied the sanitary system of the British navy, and passed examinations for the degrees of F.R.C.S. and F.R.C.P.

On his return to his native country he directed his chief attention to reformation of the sanitary and medical systems of the newly born navy of Japan. It was not only reorganization that he accomplished, but the creation of an entire medical equipment and medical sanitary service for the Japanese navy. He was rapidly promoted to the rank of surgeon-general of the navy, which position he held until the time of the Japan-China war. At present he is in the Naval Reserve. As a recognition of his great services rendered to the Emperor and his country, he was created a Baron after the conclusion of the Japan-China war.

During his active service in the navy Baron Takaki initiated and carried out certain fundamental changes in the dietary and sanitary regulations of the navy which resulted in the almost total suppression of beriberi, which, up to that time, had seriously impaired the efficiency of the service, affecting annually almost one quarter of the navy's personnel. Baron Takaki also has been president of the Naval Academy of Japan, president of the Tokyo Charity Hospital, councillor of the Association for the Sanitary Improvement of Japan, and has held other important positions. He has been active in spreading the principles of the Red Cross Society in Japan, and it is to his efforts that the large number of Red Cross members in Japan is largely due.

Baron Takaki has received the honorary degree of Doctor of Medicine of the Japanese government, a degree issued only by the Department of Education and not the same as the degree of M.D. conferred on graduates of the University.

He is a member of the House of Peers of the Parliament of Japan, having been directly nominated by the Emperor.

ments of human effort, primarily from labor unions, a great number and variety of orders and societies, fraternal, socialistic, political, politico-religious, beneficiary, composing both sexes and all having certain characteristics in common. They appeal strongly to the *genius hominis*; he is gregarious, likes to flock, ever ready to try to get something for nothing while taking no risk. Most of these orders have as a part of this system a doctor who is known as the doctor of the order, and who contracts and agrees to treat each member of the order for a year for a certain insignificant sum which he receives from each member, whether they have called upon him or not. The question of admitting this class of doctors to the Berkshire District Medical Society came up at its last meeting, Dec. 28, 1905, when candidates came up for membership, but it was not discussed. It has seemed to many of the old time physicians that a doctor who contracts to treat professionally for a year a man or woman for \$1.50 to \$2.00 should not masquerade as a member of the ancient and honorable Massachusetts Medical Society. That the censors of each county should make it a bar to admission for the following reasons:

SOME REASONS WHY CONTRACT PHYSICIANS SHOULD BE EXCLUDED FROM THE BERKSHIRE DISTRICT MEDICAL SOCIETY.

1. The system violates correct medical ethics in that it is a close corporation, a combine between a physician and an order.
2. It tends to dwarf individual progress and independence in the physician himself.
3. It so cheapens professional learning that the community will question its existence.
4. It is a tacit confession of impunctuality and inferiority.
5. It results in a lowering of professional dignity and self-respect.
6. It is an unfair advantage over brother practitioners.
7. It is an aggravated form of commercialism that has no place in the profession of medicine.
8. The profession and practice of medicine never has been and never can be regulated and controlled by the same laws and methods that control trade, barter and sale.
9. The educated and cultivated physician of the past guarded with a jealous, watchful care the standards of professional excellence and character.
10. Its written code of ethics, a century old, is founded on the broad basis of equal rights and equal privileges for every member of the profession.
11. Its unwritten code is founded on the Golden Rule and is as old.

Very truly yours,

E. E. MARINE, M.D.

THE GIBBS MEMORIAL PRIZE OF THE NEW YORK ACADEMY OF MEDICINE.

New York, Jan. 15, 1906.

Mr. Editor.—In addition to and as a partial correction of the statements published in the early December issues (1905) of all the large medical weeklies of the United States concerning the Gibbs Memorial Prize Essays on the "Etiology, Pathology and Treatment of the Diseases of the Kidneys," the trustees of the New York Academy of Medicine beg leave to announce:

First. The prize amounts to two thousand dollars this time.

Second. The prize essays may be handed in October 1, not January 1, 1907, or before that date.

Third. The prize committee does not expect the etiology, pathology and treatment of the disease of the kidneys to be discussed with equal completeness. It will be satisfied with the thorough scientific consideration of part of the problem, provided an essay offers a conception containing new facts or discoveries or presenting a new or sufficient point.

For the New York Academy of Medicine:

A. JACOBI, M.D., *Chairman.*

A. M. JACOBI, M.D., *Secretary of the Trustees.*

Correspondence.

CONTRACT PHYSICIANS.

WHITTINGTON, MASS., Jan. 9, 1906.

Mr. Editor.—There has grown up within the last few years as a result or as an outgrowth of this era of combination, organization, unionism, in the various depart-

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JAN. 6, 1906.

| CITIES. | Population. Estimated for 1905.* | Reported deaths in each. | Percentage of deaths from | | | | | |
|-------------------|--|-----------------------------|-----------------------------|-------------------------|-------------------------|--------------------------|-------------------|----------|
| | | | Deaths under five years. | Infectious diseases. | Acute lung diseases. | Diphtheria and croup. | Typhoid fever. | Measles. |
| New York . . . | 1,477 | 496 | 26.51 | 22.61 | 3.38 | .74 | 1.08 | |
| Chicago . . . | 562 | 336 | 20.10 | 18.15 | 1.95 | .71 | .15 | |
| Philadelphia . . | | | | | | | | |
| St. Louis . . . | | | | | | | | |
| Baltimore . . . | 201 | 67 | 16.91 | 19.40 | | .99 | | |
| Cleveland . . . | | | | | | | | |
| Buffalo . . . | | | | | | | | |
| Pittsburg . . . | | | | | | | | |
| Cincinnati . . . | | | | | | | | |
| Milwaukee . . . | | | | | | | | |
| Washington . . . | | | | | | | | |
| Providence . . . | 76 | 23 | 18.42 | 14.47 | | .13 | .13 | |
| Boston . . . | 602,528 | 234 | 59 | 16.67 | 21.36 | .85 | .85 | 1.70 |
| Worcester . . . | 130,171 | 25 | 8 | 8.00 | 20.00 | | | |
| Fall River . . . | 105,943 | 35 | 17 | 14.29 | 21.43 | | | |
| Cambridge . . . | 98,582 | 22 | 9 | 3.69 | 23.73 | 4.55 | | |
| Lowell . . . | 94,889 | 34 | 7 | 26.47 | 20.59 | | 2.94 | |
| Lynn . . . | 78,871 | 23 | 4 | 17.39 | 13.04 | | | |
| New Bedford . . | 77,066 | 26 | 11 | 7.69 | 26.92 | | 6.61 | |
| Springfield . . . | 74,770 | 15 | 4 | 6.67 | 13.33 | | | |
| Lawrence . . . | 71,653 | 30 | 9 | 20.00 | 29.33 | | | |
| Summersville . . | 70,908 | 16 | 2 | | 12.50 | | | |
| Holyoke . . . | 50,824 | 8 | 3 | 12.50 | 37.50 | | | |
| Brookline . . . | 49,511 | 9 | 3 | 11.11 | | | | |
| Malden . . . | 38,578 | 13 | 4 | 16.67 | 23.08 | | 8.33 | |
| Salem . . . | 37,570 | 12 | 4 | 16.67 | | | | |
| Chelsea . . . | 37,968 | 10 | 5 | | 20.00 | | | |
| Haverhill . . . | 37,962 | 12 | 2 | 25.00 | 16.67 | | | |
| Newton . . . | 37,512 | 12 | 2 | 8.33 | | | | |
| Fitchburg . . . | 35,247 | 15 | 7 | 6.67 | 13.33 | | | |
| Taunton . . . | 30,967 | | | | | | | |
| Everett . . . | 30,173 | 11 | 4 | 9.09 | | | | |
| Quincy . . . | 28,995 | 7 | 1 | | 28.57 | | | |
| Waltham . . . | 26,881 | 11 | 1 | 9.09 | 18.18 | | 9.09 | |
| Gloucester . . . | 26,011 | | | | | | | |
| Pittsfield . . . | 25,704 | 5 | | 60.00 | | 20.00 | | |
| Brookline . . . | 24,207 | 11 | | | | | 50.00 | |
| North Adams . . | 22,150 | | 0 | 100.00 | | | | |
| Chicago . . . | 20,402 | 2 | | | 40.00 | | | |
| Northampton . . | 20,235 | 5 | 0 | 60.00 | | | | |
| Medford . . . | 19,988 | 4 | | | 25.00 | | | |
| Beverly . . . | 18,506 | 3 | | | 33.33 | | | |
| Holyoke . . . | 14,777 | 3 | | | | | | |
| Newburyport . . | 14,715 | 3 | 1 | 33.33 | 33.33 | | | |
| Leominster . . . | 14,712 | | | | | | | |
| Melrose . . . | 14,578 | 3 | 0 | | 33.33 | | | |
| Woburn . . . | 14,432 | 2 | 1 | | 12.50 | | | |
| Marlboro . . . | 14,108 | 5 | 0 | 20.00 | | | | |
| Westfield . . . | 13,887 | 4 | 0 | | | | | |
| Prabody . . . | 13,438 | | | | | | | |
| Revere . . . | 13,168 | 2 | 1 | 50.00 | | | | |
| Clinton . . . | 13,105 | 1 | 1 | | | | | |
| Attitash . . . | 12,945 | | | | | | | |
| Adams . . . | 12,775 | | | | | | | |
| Gardner . . . | 12,267 | | | | | | | |
| Millis . . . | 12,256 | | | | | | | |
| Weymouth . . . | 11,658 | 4 | 0 | 50.00 | | | | |
| Framingham . . . | 11,598 | | | | | | | |
| Watertown . . . | 11,597 | 3 | | | | | | |
| Plymouth . . . | 11,452 | | | | | | | |
| Southbridge . . . | 11,296 | 2 | 1 | | | | | |
| Waketon . . . | 10,476 | 4 | | | 50.00 | | | |
| Webster . . . | 10,280 | | | | | | | |

* NOTE.—The populations of the Massachusetts cities and towns are estimated from the rate of growth from 1900 to 1905. The figures for Lowell, Taunton, Gloucester, North Adams and Clinton were allowed to stand as in 1905, these places having shown no growth during the five-year period mentioned.

Deaths reported, 2,974; under five years of age, 825; principal infectious diseases (smallpox, measles, cerebrospinal meningitis, diphtheria and croup, diarrheal diseases, whooping cough, erysipelas, fevers and consumption), 557; acute lung diseases 610, consumption 303, scarlet fever 19, whooping cough 13, cerebrospinal meningitis 19, smallpox 0, erysipelas 5, puerperal fever 11, measles 22, typhoid fever 23, diarrheal diseases 69, diphtheria and croup 67.

From whooping cough, New York 4, Baltimore 4, Boston 4, Holyoke 1. From scarlet fever, New York 13, Chicago 3, Baltimore 2, Salem 1. From cerebrospinal meningitis, New York 4, Baltimore 2, Boston, Worcester, Lynn, Lawrence, Woburn and Revere, 1 each. From erysipelas, Boston 4, Brockton 1. From typhoid fever, New York 11, Chicago 4, Baltimore 2, Providence 1, Boston 2, Lowell, Springfield and North Adams, 1 each. From measles, New York 16, Chicago 1, Providence 1, Boston 4. From diphtheria and croup, New York 50, Chicago 11, Boston 2, Cambridge, Salem, Waltham and Pittsfield, 1 each.

In the seventy-six great towns of England and Wales, with an estimated population of 15,699,377, for the week ending Dec. 30, 1905, the death-rate was 17.4. Deaths reported 5,199; acute diseases of respiratory organs (London) 241, whooping cough 91, diphtheria 69, measles 117, smallpox 0, scarlet fever 43.

The death-rate ranged from 7.5 in Kings Norton to 30.6 in Hanley; London 17.8, West Ham 13.3, Brighton 16.0, Southampton 14.1, Plymouth 18.5, Bristol 18.5, Birmingham 18.9, Leicester 17.1, Nottingham 15.7, Birkenhead 17.1, Liverpool 24.9, Wigan 16.9, Bolton 14.9, Manchester 19.4, Salford 16.7, Halifax 15.9, Bradford 16.0, Leeds 17.7, Hull 16.2, Sheffield 15.3, Newcastle-on-Tyne 22.3, Cardiff 13.6, Rhondda 19.2, Merthyr Tydfil 25.4.

METEOROLOGICAL RECORD.

For the week ending Jan. 6, in Boston, according to observations furnished by Sergeant J. W. Smith of the United States Signal Corps:

| DATE | Barometer. | Thermometer. | | Relative humidity. | | Direction of wind. | | Velocity of wind. | | We'th'r. | | Rainfall in inches. | | |
|---------|-------------|--------------|----------|--------------------|-----------|--------------------|-------------|-------------------|-----------|-----------|-----------|---------------------|----|-----|
| | Daily mean. | Daily mean. | Maximum. | Minimum. | 8.00 A.M. | 8.00 P.M. | Daily mean. | 8.00 A.M. | 8.00 P.M. | 8.00 A.M. | 8.00 P.M. | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| S. . 31 | 29.96 | 40 | 44 | 35 | 54 | 50 | 52 | W | W | 16 | 8 | C. | O. | 0 |
| M. . 1 | 30.10 | 36 | 41 | 32 | 80 | 51 | 66 | W | W | 14 | 15 | C. | O. | .02 |
| T. . 2 | 30.31 | 30 | 33 | 26 | 49 | 39 | 44 | N | W | 13 | 12 | C. | O. | .06 |
| W. . 3 | 30.34 | 28 | 35 | 22 | 46 | 80 | 63 | N | W | 11 | 10 | F. | S. | .37 |
| T. . 4 | 30.36 | 46 | 58 | 35 | 100 | -62 | 51 | S | W | 7 | 14 | G. | F. | .62 |
| F. . 5 | 29.63 | 40 | 43 | 37 | 56 | 59 | 58 | W | W | 12 | 12 | O. | C. | 0 |
| S. . 6 | 29.74 | 36 | 41 | 31 | 57 | 60 | 58 | W | W | 11 | 15 | O. | C. | .02 |
| Σ | 30.05 | | 42 | 31 | | 60 | | | | | | | | .93 |

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow; X., below zero. † Indicates trace of rainfall. Σ—Means for the week.

RECENT DEATHS.

DR. FRANK PARKER PERRY of Bucksport, Me., died Jan. 13, at the age of fifty-five. He received his medical education at Bowdoin Medical School.

DR. HARRY A. MCGIBSON of Brooklyn, N. Y., was killed in an elevator accident on Jan. 12. He was thirty-five years old, and was graduated from the Illinois Medical College, Chicago, in 1898. At the time of his death he was assistant dermatologist in the Brooklyn Central Infirmary.

DR. SELWYN A. RUSSELL of Poughkeepsie, N. Y., died on Jan. 12, in the fifty-third year of his age. He was graduated from the Albany Medical College in 1877, and for several years served on the medical staffs of the state hospitals for the insane at Utica and Poughkeepsie.

DR. H. EUGENE PARK of Whitehouse Station, Hantardon County, N. J., died on Jan. 8, at the age of fifty-six years. He served for several terms as County Clerk, and at the time of his death was Fish and Game Warden.

APPOINTMENTS.

H. H. HASKELL, M.D., has been appointed ophthalmic surgeon at the Massachusetts Charitable Eye and Ear Infirmary.

F. H. VERHOEFF, M.D., has been appointed assistant ophthalmic surgeon at the Massachusetts Charitable Eye and Ear Infirmary.

BOOKS AND PAMPHLETS RECEIVED.

International Clinics. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, Neurology, Pediatrics, Obstetrics, Gynecology, Orthopedics, Pathology, Dermatology, Ophthalmology, Otolaryngology, Rhinology, Laryngology, Hygiene and Other Topics of Interest to Students and Practitioners. By Leading Members of the Medical Profession throughout the World. Edited by A. O. J. Kelly, A.M., M.D., Vol. III, Fifteenth Series, 1905. Philadelphia and London: J. B. Lippincott Co.

A Treatise on Diagnostic Methods of Examination. By Prof. Dr. Hermann Sahli. Edited, with additions, by Francis P. Kinnicut, M.D., and Nathaniel Bowditch Potter, M.D. Authorized translation from the fourth revised and enlarged German edition. Illustrated. Philadelphia and London: W. B. Saunders & Co. 1905.

Original Articles.

ON THE DEVELOPMENT OF SCIENTIFIC
HYDROTHERAPY.

BY JOSEPH H. PRATT, A.M., M.D., BOSTON.

*Physician to Out Patients, Massachusetts General Hospital; Assistant
in the Theory and Practice of Physic, Harvard University.*

THE NEED OF GREATER ATTENTION TO HYDROTHERAPY IN AMERICAN MEDICINE.

IN A paper I read before the Massachusetts Medical Society in 1904 the attempt was made to indicate the position held by hydrotherapy at the present time in the leading countries of the world.¹ My investigation included a study of the hydrotherapeutic facilities in some of the leading medical clinics of Germany, Austria, Italy and England, an examination of the amount and quality of hydrotherapeutic literature, a comparison of the leading textbooks in German and English with reference to hydrotherapy, and of the medical curricula of the different countries. It was perfectly evident from this inquiry that American medicine lags behind not only Germany and France, but all the leading nations except England. Scientific hydrotherapy will not be widely used in private practice until it is accurately taught in the schools. In 1902 thirteen out of the nineteen German universities gave special courses in physical therapeutics, many of which were devoted to hydrotherapy. In America, on the other hand, not one university gave a similar course.

In the introduction of that splendid system of medicine, "Die deutsche Klinik," Professor von Leyden describes the German clinic as it exists at the beginning of the twentieth century. It is significant that over half of this essay is devoted to therapeutics and attention is chiefly paid to methods of treatment without drugs. Modern therapy in Germany is becoming more and more to mean physical therapy, and of all the branches of physical therapeutics hydrotherapy has the widest field of usefulness. Von Mering's textbook of medicine indicates probably more accurately than any other work the position hydrotherapy holds in the university clinics of Germany. It is composite work prepared by fourteen of the leading medical teachers. In the first edition, published in 1901, there are references to many diseases in the index under "hydrotherapy" and "baths." In the third edition issued in 1905, all reference to hydrotherapy has been omitted from the index, and the word "bath" does not appear there. On examining the body of the work, the reason is evident, to have indexed all the diseases for which hydrotherapeutic procedures are recommended would have meant the enumeration of nearly every clinical condition described in the work. Hence, to mention hydrotherapy in the index would have been of no more value than to list all the cases for which pharmacotherapy was advised. Von Leyden said that the "dietetic and physical

therapeutic methods should be studied, developed, practiced and investigated." These words have evidently been heeded. Another quotation of von Leyden's that Bunn has selected as a motto for his "Lexikon der Physikalischen Therapie," indicates the direction of therapeutic development in Germany: "Physical therapy should be utilized not in the clinic alone, it must become the common property of general practitioners."

In America the influence of this new movement in therapeutics is yet scarcely apparent. Here diagnosis is still supreme. As in the days of Frerichs and Traube in Berlin, that physician is the most famous who can say to his students after an autopsy, "We have found everything exactly as we expected."²

The therapeutic movement in Germany began with the abandonment of the search for drugs of supposedly specific action. Many of our leaders have apparently believed with Dietl, the high priest of Nihilism, "that there are no true therapeutists, there are only optimistic physicians." The result has been that most of the physicians of this country can be divided into two groups, those whose therapeutic unlabeled or skepticism has led them to pay little or no attention to treatment, and, secondly, those whose reasonless faith accepts without question the claims of the exploiters of proprietary medicines.³ Doubtless the reason that hydrotherapy and the other forms of physical therapeutics are still looked upon with suspicion by our best physicians is due to the fact that they have received such scant recognition by the medical leaders and have been accorded such extravagant praise by irregular practitioners.

There are some indications that the dawn of a new and better day in American medicine is at hand. In a few schools demonstrations and special lectures on modern methods of treatment are given. Detotherapy based upon physiological laws is being studied, and instruction in pharmacology has replaced antiquated courses in materia medica.

Excellent works on hydrotherapy have been published and they are having an increasing sale. The admirable textbook on hydrotherapy by Dr. Baruch has been translated into German and honor rarely accorded to any American medical author.

THE PHYSIOLOGICAL BASIS OF HYDROTHERAPY.

The term "hydrotherapy" would denote the use of water in its three physical states—solid, liquid and gaseous. The water is used either as a medium for the conveyance of temperature. The greater the variation of temperature between the medium used and the body, the greater the effect on circulation. Although both cold and hot applications exert a thermic irritation on the skin,

1. Von Leyden. Die deutsche Klinik, p. 13. 2. Baruch. Hydrotherapie, p. 1. 3. A few hours after writing the above I received a letter from a leading pharmacologist. "I find it a pity," says the writer, "that in the United States, where therapeutics is so scientific and so much eliminated, we do not have a more rational and more well reasoned, which is necessary to the cause and restoring the natural alkalinity of the blood."

of the two is widely different. Mechanical irritation is frequently combined with thermic irritation in hydrotherapeutic procedures. The mechanical irritation is best exerted by the so-called "douche treatment." The essential feature of the douche treatment is the impact of a stream of water upon the surface of the body. By varying the pressure and temperature, the mechanical and thermic irritation may be increased or decreased as desired. In all treatments with cool or cold applications it is essential that a reaction should occur at the close of the treatment. By reaction is understood, a secondary dilatation of the cutaneous vessels following the primary contraction which the cold application produces. In order to insure a good reaction cold applications are almost always preceded by some heating procedure. In hydrotherapeutic insti-

fever, as Romberg and Pässler have shown that the so-called heart failure in acute infectious diseases is usually due to paralysis of the vaso-motor center. Cold baths stimulate the sensorium. This action was recognized years ago in the treatment of delirium and somnolence in fever. It is also seen in the feeling of well being induced by properly administered cold applications to persons in health. Lukewarm baths have a sedative action, and are one of the best means of overcoming insomnia.

Modern hydrotherapy is founded on the solid rock of physiological and pathological knowledge. The work of Wilhelm Winternitz should never be forgotten by students of hydrotherapy. His physiological investigations and those of his students rescued hydropathic treatments from empiricism and quackery. The physiological basis



Office and reception room of "The Medical Baths." This is a co-operative enterprise for furnishing hydrotherapeutic facilities to Boston physicians.

tutions, hot-air baths, vapor baths or light baths are generally employed for this purpose.

Exercise or massage is frequently of service in promoting a good reaction after a cold application. It will thus be seen that hydrotherapy is not employed alone, but is combined with thermotherapy, light-therapy and mechanotherapy. There is a widespread error even among physicians that hydrotherapy is limited to cold-water treatments. Other common misconceptions are that hydrotherapeutic treatments exert little or no influence on the body; that no matter how applied, they are harmless and act chiefly or entirely by suggestion. Investigation, however, shows that there are few drugs in the pharmacopoeia which, in therapeutic doses, have such an influence upon the animal economy. Cold water is the safest and the most powerful antipyretic. Still more important therapeutically is the stimulating action of cold applications on the vaso-motor center. This probably explains the beneficial effects of cold baths in typhoid

of hydrotherapy is well presented by Matthes in his textbook.⁴ Over one hundred pages are devoted to the consideration of the action of water treatments on the functions of the human body. Water exerts its most pronounced effect upon the circulatory, respiratory and nervous systems. Cold or hot irritation applied to the skin not only acts directly upon the surface treated, but reflexly through the central nervous system upon the circulation in other parts of the body. For example, if the hand be plunged into cold water not only the vessels of that hand become contracted, but of the other hand as well. It has been demonstrated that cold irritation of short duration applied to the feet of a rabbit produces contraction of the vessels of the pia mater. Of great importance therapeutically is the fact that the circulation in the abdominal organs is influenced by the application of heat or cold to the surface of the body (Brieger). Hydrotherapeutic procedures have a pronounced

⁴Matthes: Lehrbuch der klinischen Hydrotherapie, Jena, 1903.

influence on the blood pressure. Those irritants that cause a contraction of the vessels lead to an elevation, while those that produce a dilatation cause a sinking of the blood pressure. Hence, the general statement can be made that cold applications raise the blood pressure, while warm applications lower it.

The action of the heart and the frequency of the pulse are likewise influenced by thermic and cold irritants. Cold applied locally over the heart or to the entire body diminishes the frequency and increases the force of the cardiac contractions, while the warm irritant increases the pulse rate. Carbon dioxide baths exert the most marked effect on the heart. The minute carbon dioxide bubbles which cover the entire surface of the body act as powerful mechanical

long continued, diminish the sensibility of the peripheral nerves; and hence are of importance in stilling pain. The value of long-continued warm applications over the abdomen in cases of gastric or intestinal pain is probably due in large part to the resulting hyperemia of these organs. In certain cases the beneficial effect of hot applications to the abdomen in intestinal disease is due to the action of the heat irritant on the smooth muscle of the intestine, producing a lessening of peristalsis, and relaxation of the intestinal wall.

A single energetic hot air bath may lead to a loss of sweat amounting to more than a liter. In one of my cases it amounted to 1,500 grams. That this great secretion of sweat influences profoundly the whole circulation of blood and lymph is easily understood. It is of undoubted



A small treatment room

stimuli. In cases of dilated heart I have frequently observed a temporary reduction in the transverse diameter, as determined by percussion, amounting to 3 cm. or more. Cold procedures cause a local increase in the number of erythrocytes and leucocytes in the capillary circulation. Warm procedures, such as hot full baths, hot air and electric light baths, produce an increase in metabolism, especially in the breaking down of non-nitrogenous substances. In hot full baths this increase in oxidation has been shown to be more marked than that which occurs in fever. With the application of intense heat, especially if often repeated, there is increased destruction of albumin.

The sudden application of cold to the surface of the body, especially to the back of the neck, produces a deep inspiration, and at its height a pause. This is followed by deep respirations, usually of increased frequency. Heat irritation on the other hand, leads to respirations of increased frequency and generally of more superficial character. Both the cold and warm irritants

value in the elimination of morbid products. It has been shown that in renal insufficiency the abnormally high molecular concentration of the blood can be reduced by sweating and it has been recently found that in these cases the low nitrogen content as well as the molecular concentration of the sweat is considerably increased. The importance of the increased secretion of sweat in the elimination of various poisons, including lead, mercury and bacterial toxins, and in the elimination of pathogenic microorganisms, should be mentioned. The procedure, which elevates the blood pressure and increases the general circulation cause an increased elimination. This is especially marked after the administration of carbon dioxide. Not only the excessively cold procedures, but also the hot full baths, albumin and albuminuria.

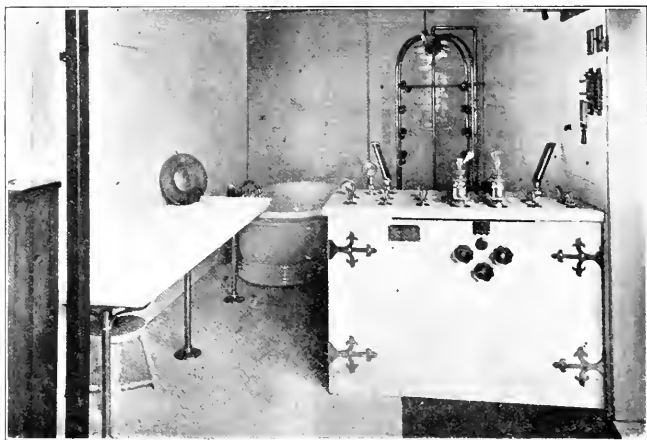
HYDROTHERAPY AND AEROTHERAPY

In the treatment of a great number of diseases hydrotherapeutic procedures may be of great advantage. They should of course be con-

ployed in conjunction with drugs when drugs are indicated and are frequently of value combined with other forms of physical-dietetic treatment. Often hydrotherapy may be substituted for pharmacotherapy to advantage. A full tub bath at 90° Fahr. of fifteen to thirty minutes' duration is better than trional in insomnia, and hot compresses to the abdomen in gastric ulcer are preferable to morphine.

The great variety of effects produced by water of different temperatures should be specially emphasized. According to the temperature employed, the blood pressure may be raised or lowered, local congestion, or anemia produced, the pulse-rate increased or decreased, respirations quickened or deepened, and the action on the

clearly understood that it may have to be altered in a few days or possibly an entirely different form of treatment substituted in order to obtain the best results. Increased experience with neurasthenia has impressed me with the truth of Binswanger's dictum in regard to hydrotherapy in this disease, "that the success of any hydiatic procedure can never be predicted, and the individual reaction of the patient is decisive." I agree with v. Strümpell⁵ and Matthes⁶ that the water treatment in neurasthenia acts chiefly as a psychical influence. An electric light or hot air bath followed by a cool application usually gives rise to a general feeling of well being. This doubtless produces in many sick individuals a powerful *Heilsuggestion*. The benefit I have



The douche room of "The Medical Baths."

sensorium may be stimulating or depressing. In many incurable diseases properly selected hydrotherapeutic measures are distinctly beneficial. They make the patients feel better, eat better and sleep better. I believe that more attention should be paid to the treatment of this distressing class of cases. To keep a patient with inoperable malignant disease or chronic nephritis comfortable, or at least to make the downward journey as easy as possible is no small thing. Some hydiatic procedures are so mild that they may be given with benefit and without danger to very feeble patients.

The important place of hydrotherapy in the treatment of neurasthenia and in other psychoneuroses is so well known as to completely overshadow in the minds of many its other fields of usefulness. It is true, however, that hydrotherapy achieves equally good results in other diseases. The right selection of hydiatic treatment in neurasthenia is often difficult. No firm or fast rule can be followed with success. Every case must be individualized. If a hydrotherapeutic prescription is given it should always be

seen in many cases has been so marked and so sudden as to make this explanation the most plausible one. Good effects have been much more striking when treatments were carried out at the hydrotherapeutic institute than when they were given in the home of the patient. The action of the procedure on the body would be the same in the two places but the action on the mind might be very different. I have noticed that those neurasthenic patients have rarely done well whose physicians have had slight confidence in hydrotherapy or who revealed to the patients that they had had little experience with it.

NON-COMMERCIAL HYDROTHERAPEUTIC INSTITUTES.

In Boston a successful experiment has been made in professional co-operation. In the fall of 1903 a hydrotherapeutic institute was established by a number of physicians interested in

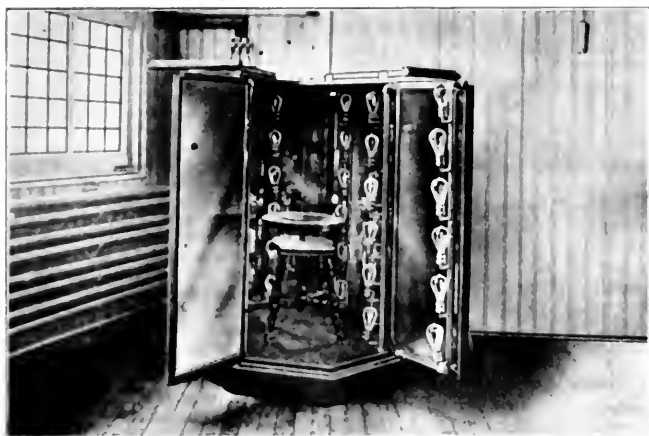
⁵ v. Strümpell: Die funktionellen Neurosen in Penzoldt-Stintzings Handbuch der spez. Therapie, Jena, 1903, v. p. 391.

⁶ Matthes: Lehrbuch der klinischen Hydrotherapie, Jena, 1903, p. 333.

the securing hydrotherapeutic facilities for the benefit of their patients. At that time the attention of the profession was called to this enterprise in the columns of this JOURNAL,⁷ and a plea was made for more attention to this department of therapeutics. The second year of its work has just closed and it is a pleasure to report that it has been a financial as well as a therapeutic success. During the past year the receipts from patients were \$3,986. This was sufficient to make the establishment self-supporting, and was a gain of 70% over the preceding year. Equally gratifying is the increase in the number of physicians who have referred patients to the medical baths, and the increase in the number of disorders that have been treated. At first we received neurasthenic and rheumatic cases almost exclusively. During the last few months

recently instruction in hydrotherapeutic procedures was given here to the Senior class of the Harvard Medical School.

This institute, or the Medical Baths, as it is called, has done much to give dignity to scientific hydrotherapy in this community. The establishment of similar institutions in other cities could not but help to develop interest in this important but much neglected form of treatment. The organization and the maintenance of such institutions should not be difficult in cities much smaller than Boston. Our institute is due almost entirely to the labor of Dr. James J. Putnam, who planned and initiated this movement, and whose continued support has rendered success possible. Two years ago at his suggestion, a meeting was called to consider "the practicality of maintaining a hydrotherapeutic estab-



Electric light cabinet. When the patient is seated on the stool and the apparatus closed the entire body with the exception of the head and neck is exposed to the radiant heat. Sweating more profuse, occurs at a lower temperature, and is givensooner than when a hot air bath is employed, and in muscular rheumatism and neuralgia the anæsthetic effect is more marked.

among the maladies treated have been cases of heart disease, chronic parenchymatous nephritis and chronic interstitial nephritis, obesity, arteriosclerosis, tuberculosis and severe cerebral and spinal diseases.

During the past summer it was necessary to close the establishment for an entire month in order to repair and renovate. A new cement floor was laid in the douche room as the tile floor previously used had given rise to troublesome leaks. At this time an original form of local hot air bath was added to the therapeutic equipment. It was decided before the institution was opened that it should be in no sense a commercial enterprise. It is intended that any surplus which may accumulate after the debts incurred in fitting up the establishment have been paid shall be devoted to increasing its facilities or in promoting the advance of hydrotherapy in various ways. Re-

lishment where private patients can be carefully treated and suitable researches carried on." On this occasion a committee, composed of Dr. J. J. Putnam, E. G. Cutler and R. W. Lovett, was appointed to assume charge of such an undertaking. Since the opening of the Medical Baths they have acted as its governing board. Dr. Putnam raised over \$34,000 for the equipment of the institute. Most of this sum of money was contributed by friends of Dr. Putnam outside of the medical profession. The physicians who subscribed to a contingent guarantee fund of \$2,000 included many of the ablest local physicians, at the large hospitals and teachers in the Harvard and Tufts medical schools.

Admirable quarters were secured on the upper floor of a modern office building. Plenty of light and sunshine was thus obtained. The rooms were attractively furnished. A complete Biers-Richter apparatus for douche treatment was installed. This form of douche table with a

⁷Putnam, BOSTON MEDICAL AND SURGICAL JOURNAL, January 1903, vol. 5, p. 746.
 Pratt, *Ibid.*, 1904, et. p. 288.

facilities for regulating exactly the different temperatures is probably equal to any in the world. In order to secure the proper water pressure so far above the street level it was necessary to add an electric pump to the equipment. Our operators have been thoroughly trained in the application of simple hydrotherapeutic measures as well as those that require elaborate apparatus. Hence, it has been possible to give all forms of hydropathic treatments. The establishment is under the immediate charge of a matron who has been with us from the beginning. She is on duty the entire day, and arranges the hours for treatment. Our plan of reserving a definite hour for each patient has proved an admirable one. From 9 A.M. to 1 P.M. women are treated, and the afternoon is reserved for men. Mr. Anderson and Miss Moran, our chief operators, are both graduates of the Posse Gymnasium, where they received a thorough training in mechanotherapy. As they only spend a half of each day at the Medical Baths, it has been possible for any physician in the city or vicinity to engage their services for the administration of hydrotherapeutic treatments in the homes of patients. Inasmuch as the number of persons in this section of the country who have mastered the technique of hydrotherapy in addition to massage and gymnastics is small, we consider that this is not the least of the benefits conferred by this institution on the community. The success attained by Dr. Putnam and his colleagues in this enterprise has led nearly every hospital in the city to formulate plans for adding a hydrotherapeutic department to their equipment.

REPORT OF ILLUSTRATIVE CASES.

The following cases which I have seen within the past year indicate clearly the beneficial results that may sometimes be obtained by hydrotherapeutic procedures alone and combined with other remedial agents.

CASE I. *Chronic parenchymatous nephritis; extreme anasarca; disappearance of edema; weight diminished 58½ pounds with gain in strength.* — Mrs. L., aged forty-five. She was referred to me by Dr. Daniel of Watertown. For a year there had been marked anasarca. Her abdomen had been tapped three times. Diuretics had been tried repeatedly but it had been found impossible to reduce the urine. I found 0.9% of albumin in the urine with hyaline and granular casts. At the time of my first examination, March 30, 1905, the face was puffy, the abdomen was distended with fluid, and the edema of the legs was so great as to produce an elephantine appearance. She weighed 188½ pounds. A "salt-free diet" with electric light and full-tub baths were prescribed. After four months' treatment there was only a trace of edema remaining. Her weight had been reduced to 130 pounds, a loss of 58½ pounds, with a gain in strength, and apparently a gain in flesh. There has been an increase in the amount of urine secreted. Her general condition is now very good. On Oct. 10, 1905, she weighed 129½ pounds. I attribute the remarkable improvement chiefly to the "salt-free" diet, but I believe the electric light baths to have been a valuable adjunct.

CASE II. *Coronary endarteritis; chronic interstitial nephritis; cardiac insufficiency; great improvement pro-*

duced by carbon dioxide baths and muscular exercise. Mrs. J., aged, sixty-six, was a patient of Dr. Cahill. She had been confined to the house for six months owing to shortness of breath. While spending a few days in Boston in the fall of 1904 she climbed two flights of stairs in order to visit her dressmaker. This exertion produced such severe dyspnea that the attempt had not been repeated. The apex beat was in the sixth intercostal space outside the mammillary line, and 13 cm. from the midsternal line. The cardiac outline was enlarged, chiefly to the left. There was a systolic bruit at the apex. The pulse was at times irregular and intermittent. The blood pressure at the first examination was 215 (Riva-Rocci, broad cuff). The urine contained a trace of albumin and an occasional hyaline tube-cast. The twenty-four hour quantity was only 385 cc.

In spite of the high blood pressure I advised carbon-dioxide baths, beginning with salt baths containing only a small amount of carbon dioxide.

She took twenty-eight baths and after the first week of treatment, graduated exercises. The blood pressure became permanently lowered. At the time she finished the course of baths, June 26, 1905, it was 165. The stronger baths produced a temporary reduction of 3 to 4 cm. in the width of cardiac dullness. During the last two weeks of treatment she frequently walked from the hydrotherapeutic institute to the Hotel Westminster, a distance of half a mile, without shortness of breath or other discomfort. Improvement continued and on Jan. 1, 1906, her condition is excellent, and she is able to take exercise.

CASE III. *Obesity, producing dyspnea and difficulty in walking, loss of 26½ pounds in two months with general improvement and gain in strength.* The patient, a woman, aged forty-eight, was referred to me by Dr. C. M. Hutchinson of Waltham. She had been slowly putting on fat for twenty years. For the past five years she has suffered from shortness of breath on exertion, which became so bad as to interfere with her work about the house. She was able to walk but little. When I first saw her on Sept. 14, 1905, the breathing was labored and accelerated, the effect of a short walk. She was a very obese, florid woman, weighing 256 pounds. The bony framework was small. The heart and kidneys were healthy. I prescribed a restricted diet and three electric light baths weekly, each of forty-five minutes' duration. On Oct. 16, she weighed 238 pounds, a loss of 18 pounds in a month. She had much less dyspnea and felt stronger and able to walk more. In addition to the baths and diet I now gave her Carlsbad salts and thyroid extract. On Nov. 20, the end of the second month of treatment, her weight was 229½ pounds, a reduction of 26½ pounds, with marked improvement in her general condition.

CASE IV. *Subacute rheumatism.* June 10, 1905. I saw to-day with Dr. Sheehan of Stoneham, W. A., aged twenty-two, who is troubled with lameness of the legs, stiffness of the neck, and pains in the muscles of the trunk, arms and legs. In 1901 he was confined to his bed three months with rheumatic fever. In 1904 he suffered from stiffness of the joints and muscular pain. Treatment at the Virginia Hot Springs resulted in a complete disappearance of symptoms. In January, 1905, the rheumatism returned and has persisted. The joints chiefly involved are the ankles and right wrist. At times the ankles are swollen. Stiffness has affected chiefly the fingers and spine. On May 1, he came from New York to Stoneham and placed himself under Dr. Sheehan's care. At that time his temperature was found to be 102½. He was put to bed and sweating procedures used. The fever soon left him.

Status praesens. The patient is a well built young

man. The complexion is pale and pasty but the hemoglobin is found to be 95% (Sahli). He walks with the aid of a cane. The neck is held stiffly and the right thumb is slightly swollen and its movement limited. Temperature 99°. Heart normal. I advised daily electric light baths and douches, Carlsbad salts, and a diet rich in fats and proteids.

June 23. Although the weather has been damp or rainy for a week there has been no return of pain or stiffness.

July 7. Feels perfectly well. He has taken twenty-two baths, and spends much time in the sunlight, as directed. He drinks from three pints to two quarts of milk daily with relish, and has gained eight pounds in weight. He had used a cane for a long time before beginning treatment, but discarded it about two weeks ago.

CASE V. *Insomnia of neurosthenia*. Mrs. K., aged forty-five years, seen with Dr. W. H. Howe, June 5, 1905. She had not been sleeping well for the past year. Last summer she spent several weeks camping out in the woods, but obtained no benefit. For the past four months she has had persistent insomnia and anorexia. She frequently does not fall into a sound sleep until five o'clock in the morning, and then awakes at seven. At the time Dr. Howe was first consulted she was taking a small amount of alcohol regularly before going to bed and a dose of trional about every other night. We advised daily treatments at the Medical Baths, consisting of an electric light bath and douches, for a month. Neutral baths at night were also prescribed. No hypnotics were used. She began to sleep well after the first week. She left for the country early in July and returned to town a month later in better condition than she had been for a long time.

CASE VI. *Severe neurosthenia of long duration*. Mrs. R., aged fifty-eight years, was sent to me by Dr. W. H. Baker in October, 1904. She stated that for twelve years she had been troubled with severe nervous prostration. She had tried all manner of treatment. At the time I first saw her she was unable to live with her family in Boston, because the stir of life in the city was unendurable. She complained chiefly of frequent attacks of faintness with a sinking sensation over the precordia. While I was obtaining the clinical history she became much agitated, and began to breathe deeply and heavily. Her face became flushed, and she complained that the room was very hot, although it was really uncomfortably cool. She begged to be led to an open window, and was fearful that she would faint.

I suggested that mild hydropathic treatments might be of value. She consented to try them, although she stated that in the past she had been unable to take even sun-baths. Very gentle procedures were employed. At first *Treibschümpen*, later douches. It was found necessary to fan her constantly while in the electric light cabinet. Her condition improved greatly and she is now able to live in town, and states that she feels like another woman. She still has very little nervous capital and continues to take treatments.

enlarged middle turbinate, polypi, etc., and the irrigation of the sinus through the naso-frontal canal.

Rhinologists differ as to the results obtained by this procedure. Turner¹ is of the opinion that the number of cases cured must be very small, while Hajek² takes a more favorable view, which is shown by his report of the intranasal treatment of twenty-seven cases. Out of this number nine were cured, eleven had a slight muco-purulent secretion remaining, while only seven received no improvement in physical signs, although the headaches were stopped in all but three.

Ingals³ has recently advocated a method of enlarging and maintaining the patency of the naso-frontal canal, which adds to the possibilities of the intranasal treatment and deserves careful trial.

Schaffer's⁴ method of perforating the floor of the sinus between the middle turbinate and septum should never be undertaken.

The external ways of reaching the frontal sinus are numerous and can be most easily reviewed in a tabulated form. The first group includes those operations that permanently remove a part or the whole of the sinus wall.

1. Removal of the anterior wall.
 - (a) Entire anterior wall. Kuntz.⁵
 - (b) Part or the whole of the anterior wall with enlargement of the naso-frontal canal. Ogston,⁶ Luc,⁷ Nelinger, Praun,⁸ Ropke,⁹ Croakley.¹⁰
2. Removal of the inferior wall. Jansen.¹¹
3. Removal of the anterior and inferior wall. Richards.¹²
4. Removal of the anterior and inferior wall. Riedel.¹³
5. Removal of the anterior wall of the sinus and the frontal process of the superior maxilla. Hartmann.¹⁴
6. Removal of the anterior and inferior wall of the sinus, leaving a bridge, and the frontal process of the superior maxilla. Killian.¹⁵

The second group includes the operations that temporarily resect the anterior and inferior walls. Osteoplastic methods of Brieger,¹⁶ Czerny,¹⁷ Winekler,¹⁸ Barth,¹⁹ Hajek,² Lothrop.²¹

The object of these operations is to leave the sinus intact or to obliterate it.

In a case of chronic purulent frontal sinusitis, in which intranasal treatment has failed to give relief, which of our present operative procedures is the best to permanently relieve the patient of his symptoms, with the least danger, deformity and time? Such an operation should, first of all, freely expose the sinus so that all parts can be examined and diseased areas completely removed.

2. It should include the removal of the anterior ethmoid cells, as these cells are nearly always associatedly diseased. Zuckerkandl²² states that he has never seen a case on the post-mortem table with disease of the frontal sinus, which did not show involvement of the ethmoid cells.

3. It should provide a large opening for drainage, preferably into the nasal cavity, after nature's example. This opening as Zarnko²³ says, "should not be like a narrow neck bottle but like a wide open bay."

DESCRIPTION OF KILLIAN'S FRONTAL SINUS OPERATION.

BY E. E. FOSTER, M.D., NEW BEDFORD, MASS.

THE treatment of chronic frontal sinusitis may be considered under two heads, the intranasal, or the so-called conservative method, and the extranasal, or the radical procedure. The former comprises the removal of all irregularities causing an obstruction to free drainage from the frontal sinus: such as a deviated septum, an

4. It should be as free as possible from danger to life, produce little disfigurement and have a short after-treatment.

None of the operations presented will cover these demands so completely as Professor Killian's. His operation includes the best features of the other operations and in my opinion possesses the merits of as near a universal frontal sinus operation as has yet been conceived. It should be undertaken, however, only by persons possessing a thorough knowledge of the anatomy of this region, and with surgical ability.

The principals of the operation are the same as described by Killian in the *Archiv für Laryngologie*.¹⁵ As a result, however, of further experience he has been able to add much of value in the way of technique, which has improved, to quite an extent, the results of the operation, as his later cases show. These improvements in technique were reported by him at a meeting of the Vereins Süddeutscher Laryngologen in Heidelberg, June, 1904.²⁴ In our literature there are several brief outlines of this operation (Derby,²⁵ Freudenthal,²⁶ Canfield,²⁷ Harris²⁸), but each is based upon the original description and does not include the recent improvements, especially the resection of the floor of the sinus from below and the details for resecting the frontal process and diseased cells.

Zarniko's²³ description, which is the best that I have found in the German literature, is not wholly in accord with Killian's lately reported improvements.

I have seen the so-called Killian operation performed both here and in Europe, and I know the results would have been better in most instances had Killian's method been more thoroughly understood. It is with this in mind that I have prepared the following brief account of the operation as I have seen it done by both Professor Killian and his assistant, Dozent von Eicken.

Up to June, 1904, they had operated upon 50 patients.

Killian considers as indications for his operation the following conditions:

1. When other operations have failed.
2. When there are indications of necrosis, as a fistula or abscess.
3. When there are symptoms of intracranial complications.
4. When in a case of chronic purulent frontal sinusitis pain and fever appear with a foul smelling discharge.
5. When there is headache, particularly when associated with discomfort in the region of the eye, which is not relieved by intranasal treatment.
6. When, in spite of oft repeated irrigations of the sinus, the discharge remains foul.
7. When the inflammation in the frontal sinus and anterior ethmoid cells produces recurring groups of polypi.
8. When a simple purulent discharge is not relieved by careful intranasal treatment, and the patient desires permanent relief by a radical procedure.

If possible, the outlines of the sinus should be determined by skiagraphy before any surgical interference is undertaken. In the hands of a skillful operator, skiagraphs can be made showing a clear outline of the sinus.

Scheier²⁹ states that skiagraphy will determine the presence or absence of the frontal sinus, the antero-posterior diameter, the height and the thickness of the anterior wall. Winckler¹⁹ even claims that he can determine the thickness of the floor and relations of the ethmoid cells.

A quarter of an hour before beginning the operation the patient is given subcutaneously $\frac{1}{4}$ grain (0.01) of morphine. Formerly the affected sinuses were then washed out and the nasal tampons put in place, but of late this is omitted, so as not to unnecessarily excite the patient. The patient is placed upon an operating table with the body raised. An anesthetic is administered. Killian uses chloroform. During, or immediately after, the anesthetization, the nasal cavity of the affected side is filled with four tampons made of cotton rolled into the shape of a small Perfectos cigar, with a thread fastened about the middle. The first one is firmly placed along the floor of the nose, between the inferior turbinate and septum; the second in the middle meatus; the third fills the olfactory cleft, and the last (which is an important one) is placed firmly in the forward part of the nose, beneath the bridge and between the frontal process of the maxillary bone and septum. This last tampon supports the mucous membrane covering the frontal process, thus preventing hemorrhage and injury during the resection of that bone. The mucous membrane thus saved forms the largest part of a flap to be described later. The first and second tampons are placed far back so as to completely close the choana. Killian never uses a post-nasal plug.

The field of operation is prepared in the usual way with soft-soap, alcohol and corrosive. Extra care should be used in cleaning the eyebrow as it is not shaved. In some of Killian's early cases, where the eyebrow had been shaved, the hairs grew very long or did not grow at all, producing in either case an unsightly appearance. He has experienced no infection as a result of leaving the eyebrow. The eye on the affected side is protected with a few layers of moist gauze, and the part of the head and body not included in the field of operation, should be carefully protected with sterile towels and sheets. Two assistants, an anesthetizer and a nurse are needed.

The surgeon stands on the side of the table corresponding to the affected sinus, facing the head of the patient. The first assistant and anesthetizer stand on the other side. The second assistant stands on an elevated platform at the head of the table. He steadies and moves the patient's head from time to time as the surgeon may wish. An electric head lamp should be at hand. The Kirstein lamp is the best. Reflected light can, of course, be used. This operation can be performed with chisels, bone forceps and the usual instruments of the ordinary surgical kit, but it is made much easier and more rapid by

using Killian's straight and curved V-shaped chisels (Fig. 1) and eye protector (Fig. 2), Hartmann's or Gründwald's cutting forceps and Lomhard's or Jansen's bone forceps. A medium-sized straight sound should be included in the list of instruments.

The initial preparations being completed, the actual operation is commenced. Killian makes three distinct incisions: The first through the

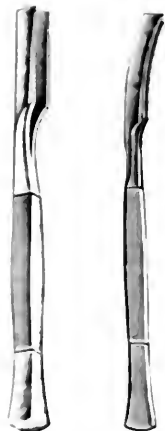


FIG. 1. Killian's straight and curved V-shaped chisels.

skin, the second through the subcutaneous tissues to the periosteum, and the third through the periosteum. The neatness and care used in making the first and third incisions has much to do with the cosmetic result. The first one begins at



FIG. 2. Killian's protector.

the temporal end of the eyebrow, extends inward through its middle to the nasal end, where it passes downward in a graceful curve along the root and side of the nose to and a little below the base of the nasal bone (Fig. 3). During the

operation the two edges of the wound are considerably stretched and difficult to accurately oppose when ready to suture. A bad approximation would produce more or less disfiguration. Killian overcomes this by making, at regular intervals, four or five short superficial incisions at right angles to the long one just described. (Fig. 3.) While cutting through the subcutaneous tissues above the eye, it is advisable to protect it and the supra-orbital margin, and to steady the tissues, by carrying a finger of the left hand beneath the supra-orbital margin with the progression of the knife. The hemorrhage is arrested with pressure and light clamps, which are left hanging. If the gauze pad protecting the eye has been soiled or pushed out of its place, which is usually the case during the above procedure, it must be replaced so that the clamps



FIG. 3. The long and transverse skin incisions.

and instruments will not injure the eye. The edges of the wound are now slightly separated with retractors and the incisions made through the periosteum. The first begins at the temporal end of the original incision, extends inward 6 to 8 mm. above and parallel to the supra-orbital margin, to the upper end of the nasal bones.

(Fig. 4.) The second begins one quarter of an inch internal to the supra-orbital notch, extends inward on the orbital margin until it intersects the nasal portion of the skin incision, which it follows to its lower end. (Fig. 4.) Formerly, the first part of this incision was made only 5 to 6 mm. above the supra-orbital margin, and the groove was marked off a little way above, leaving a part of the supra-orbital bridge uncovered with periosteum. Now the bridge is completely covered, as will be explained later. The periosteum covering the anterior wall of the frontal sinus is elevated and retracted. If the outlines of the frontal sinus have been determined by skilfully the groove forming the upper margin of the supra-orbital foramen can be made, otherwise a groove must be made into the sinus for the purpose of finding out, with a probe, its size and shape. The

opening can be made either above the supra-orbital bridge, to be formed, or just below it, at the root of the nasal bone. (Fig. 4.) The latter is the safer place. According to Mosher³⁰ the sinus in one third of the cases is just within the rim of the



FIG. 4.—The heavy lines represent the first and second periosteal incisions. The lighter curved line outlines the area of bone to be removed for the purpose of probing the sinus.

orbit at its superior internal angle. The opening should be made through the bone with a chisel, exposing but not perforating the underlying mucous membrane. A probe can then be passed between the bone and the mucous membrane outward, upward and inward, giving an approximate size of the anterior wall of the sinus. The temporal end of the sinus is marked off and a groove made from this point, extending inward nearly to the median line close to or a little below the edge of the periosteum covering the supra-orbital ridge, that is: 5 to 7 mm. above the supra-orbital margin, the object being to leave the bridge completely covered with periosteum. (Fig. 5.) This groove can be made quicker and better with a straight V-shaped chisel (Killian) although an ordinary flat chisel can be used. The lower surface of this groove forms the upper edge of the supra-orbital bridge, consequently it should be smoothly and evenly made. After the groove has been made deep enough to enter the sinus, all of the anterior wall of the sinus lying above can be removed with Lombard's, Jansen's or an ordinary bone forceps and chisel. Care should be used not to break the bridge during the resection. When the anterior wall has been completely removed, the mucous membrane and any partial bony septa must be carefully and completely erased, special attention being given to nooks, corners and the posterior surface of the supra-orbital bridge. All sharp corners, grooves or depressions must be obliterated by beveling off the surrounding elevated bone, thus leaving a smooth surface where pus cannot be retained.

This completes the work above the bridge. The sinus is loosely filled with gauze and the retracted tissues allowed to assume their normal position.

Our attention is now given to the resection of the frontal process of the superior maxillary bone. The periosteum is elevated and retracted from the nasal bone, frontal process, lacrymal groove and orbital portion of the frontal bone, toward, but not to, the supra-orbital notch. Killian's small-sized, bent, V-shaped chisel is placed at the lower end of the suture, between the nasal bone and the frontal process of the maxillary bone, and driven upward with a mallet along this suture, forming a groove as it goes. This groove is extended from the upper end of the suture into the frontal bone, toward, but not to, a point midway between the supra-orbital notch and the attachment of the trochlea, thus forming the lower edge of the supra-orbital bridge. The chisel is again placed at the lower end of the suture, as above, but this time it is driven at right angles to the suture, that is, through the frontal process toward the lacrymal bone, care being used not to injure the lacrymal sac (*vid. Collin's case*³¹). This groove prevents the downward breaking of the frontal process during its resection. (Fig. 5.) The resection can be best accomplished by starting at the lowest portion of the frontal process to be removed. This is just above the last made groove. Here the bone is thinnest and can be easily perforated without injuring the underlying mucous membrane, which must be



FIG. 5.—Grooves made with the V-shaped chisels to form the upper surface of the bridge and to outline the portion of the frontal process of the maxillary bone to be removed.

preserved for use as a flap. After a small opening through the bone has been made, bone forceps will very quickly remove the largest part of the process, but at the upper end a chisel may be needed. The resection is extended a little way above the frontal process including a small part of the frontal bone, which is a part of the sinus floor.

The removal of this bony area gives us free access to the floor of the sinus and the nasal cavity. The periosteum is now elevated from the remaining lachrymal bone and groove, from the orbital portion of the ethmoid bone posteriorly to the anterior ethmoidal vessels, and from the orbital portion of the frontal bone lying inward and downward to the trochlea attachment and supra-orbital notch. In other words, the limits for elevation and resection are: The lower part of the lachrymal groove below; the anterior ethmoidal vessels behind; and the trochlea attachment and supra-orbital notch above. The elevation is very easily done with Killian's protector. The orbital tissues are then retracted outward with the protector, and held in place by the first assistant. This gives a good view of the operative field, and makes a space in which to remove the remaining sinus floor, part of the ethmoid plate and lachrymal bone, the erosion of as many of the ethmoid cells as is found necessary, and even the opening of the sphenoid cell, if it is diseased. There is no way of so accurately and safely operating upon the ethmoid and sphenoid cells as through an opening made by the resection of the frontal process of the maxillary bone. The tampon in the forward part of the nose and the one in the olfactory cleft are now removed, the above mentioned bones resected, and the diseased cells obliterated. This is best accomplished with Gröndwald's, Hartmann's, or a similar cutting forceps and curettes, under the guidance of good artificial light. Any part of the frontal sinus floor or wall that cannot be reached from below, can be from above. Formerly Killian removed the whole of the floor of the sinus from above, but at the present time does not, except for reasons just stated.

In doing this resection the limitations must be kept in mind, that is, the lower part of the lachrymal groove below, the anterior ethmoidal vessels behind, and the trochlea attachment and supra-orbital notch above. When it is necessary to destroy ethmoidal cells posterior to the anterior ethmoidal vessels, it must be done internal to the remaining orbital plate of the ethmoid bone. After the above resection has been completed, we have a large opening from the frontal sinus into the nose, with the supra-orbital bridge in front. (Fig. 6.) The surface of the whole bony field must be made perfectly smooth. The operation is completed by making a flap of the uninjured mucous membrane that covered the resected part of the frontal process of the maxillary bone, and any adjoining healthy mucous membrane. This is done by perforating, with a sharp-pointed knife, the mucous membrane at the lower edge of the nasal bone, and by means of a probe-pointed knife the incision is continued upward along the edge of the nasal bone to within 4 cm. of the cribriform plate, where it extends backward as far as there is good mucous membrane to be used, then downward. This flap is pushed outward against the adjoining orbital tissues. If the middle turbinate has not been removed, and its mucous membrane is not degenerated, an extra

flap can be obtained by removing the forward part of the bony structure of the turbinate. This can be easily done by steadying the turbinate with a medium-sized sound in the olfactory cleft, while the bone is being removed with curette or forceps, passed through the opening made by removal of the frontal process. If the nasal mucous membrane is degenerated, the formation of a flap may be omitted.

The wound is cleaned with normal salt solution and dried. The whole area should be carefully examined for projections, nooks and corners that could in any way prevent perfect drainage. Iodoform is blown into the wound. The two remaining tampons in the nasal cavity are removed. A narrow strip of iodoform gauze is loosely placed in the region of the ethmoid cells, an end of which hangs out of the nasal orifice. In placing this



FIG. 6

gauze see that the mucous flap is in its proper position. The remaining part of the nasal cavity is filled with cotton tampons. The tampons and gauze are removed on the second day, not to be renewed, as the opening from sinus into nose is so large that all secretion will easily flow out.

In cases where the septum is deviated to the affected side and would make the opening from the sinus into the nose too narrow for good drainage, it should be straightened by the submucous resection method before undertaking the sinus operation. If Killian's¹² submucous method is used the delay will be only for three or four days. The skin in the field of operation is elevated and the wound edges are immediately sewed together with aluminum-bronze wire, when none of the following contra-indications exist. Acute process, whether it be primary or an exacerbation of a previous attack, when there is a question of an intracranial suppuration, when the pus is foetid, there exists a decided necrotic process. In all of these conditions the secretion is violent and

ought not to be inclosed in the sutured wound. The wound can be, however, safely sutured on the second or third day. Killian has immediately sutured twenty-four cases out of thirty-one, or about 80%. Great care must be used in accurately approximating the two wound surfaces. This, however, is easily done if the short superficial incisions were made at the beginning of the operation. (Fig. 3.) When the wound is not united at the end of the operation, the two surfaces are slightly separated by a gauze drain. Before applying the dressing a drop of a 1% solution of atropin is instilled into the eye. The eye is covered loosely with gauze and a good-sized dressing of moist boric acid gauze placed over all. The patient is put in bed upon the sound side, and made to lie in this position most of the time for a few days. He is forbidden to blow his nose, and told to draw into the throat all wound and nose secretion, which can be expectorated. The dressing is removed every day. The nasal tampons and gauze packing are removed on the second day. On the fourth or fifth day the sutures can be removed. A day or so later the eye is left uncovered when applying the dressing, and shortly the dressing is omitted entirely. This, of course, applies to those cases where primary union takes place. The nasal cavity is not flushed out, nor is there much intranasal treatment. At the end of the third or fourth week the wound cavity, lying above the mucous covered nasal cavity, is painted with a 2% solution of nitrate of silver, care being used not to touch the mucous membrane of the nasal cavity.

Luc,²³ who has adopted this method of operating on the frontal sinus, pays considerable attention to the after-treatment. He removes the crusts daily and carries upward into the cavity a tampon of wool soaked in peroxide of hydrogen, or a weak solution of iodine. The amount of depression above the supra-orbital bridge depends upon the size and depth of the sinus. Fortunately, however, depressions of almost any size can be filled in with the proper use of paraffin. When the maxillary sinus is associatedly diseased, it should be first operated upon, and after tightly packing, the frontal sinus attended to. As stated above, all the diseased ethmoidal cells and sphenoid cell can be most easily removed through the opening made by the removal of the frontal process of the superior maxillary bone. Killian has operated seven times upon all the accessory sinuses of one side with good results. If both sides are diseased, only one side at a time should be attended to, the other side being left until the operated side is healed. Killian says that patients willingly return for the second operation being so well pleased with the results of the first.

During my stay in Freiburg I saw this operation performed eight times and had the opportunity to observe four other patients on whom the operation had recently been done. The relief of symptoms was perfectly satisfactory. The disfigurement varied in accordance with the size and shape of the sinus, but after the use of paraffin

the cosmetic results were all that could be desired. There was no deformity below the bridge. The convalescence was of short duration, with very little after-treatment. Iritis did not occur, neither did I see permanent diplopia.

In a series of eighty cases, published and unpublished, that I have been able to collect, only two deaths occurred, making a mortality of only 2½%. The cases collected by Turner¹ show 87% of cures for the Killian operation as against 58% for the Ogston-Luc. I am confident that this percentage of cures as a result of the Killian operation will be markedly increased and the mortality decreased after the operation is better understood and carried out.

In December, 1904, I assisted Dr. Owen Smith of Portland, Me., in performing this operation on a woman seventy-six years of age, who had been suffering for a long time with chronic purulent frontal sinusitis.

The accompanying photograph (Fig. 7) was made of this patient at the time of her discharge from the hospital, three weeks after the operation.



FIG. 7.—Three weeks after a Killian operation on the left frontal sinus.

The eyebrow was shaved, as we were not obliged to consider personal appearance, so the supra-orbital scar is more noticeable than it would otherwise have been. The convalescence was free from complications. Practically no pus appeared after the removal of the tampons and ethmoidal packing. No after-treatment.

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A STUDY OF THE LARYNX IN TABES.*

BY D. CROSBY GREENE, JR., M.D., BOSTON.

THE subject of laryngeal disturbances in tabes has been investigated by many observers. The most valuable work is an elaborate monograph on the subject published in 1903 by H. Dorendorf, of Berlin, in which there is a complete résumé of the literature to date, and a detailed report and study of laryngeal manifestations found in the course of the examination of 245 cases of tabes in Gerhardt's clinic in Berlin. I have referred to this work frequently.

My purpose here is to report the result of recent examinations made at the Massachusetts General Hospital, the Massachusetts State Hospital at Tewksbury, and at the Long Island Hospital in sixty cases of tabes.

These were observed with reference:

- (1) To the proportionate number affected with paralytic and other disturbances of the larynx.
- (2) To the nature of such disturbances, and.
- (3) To the period of their occurrence in the course of the disease.

(1) Out of the 60 cases examined, 9, or 15, presented laryngeal complications. 6, or 10, showed undoubted paralysis of one or both vocal cords; 7, or 12%, were affected with laryngeal crises, 3 of these without evident paralysis of either cord; and one presented a peculiar movement of the cord in moving from the median to the lateral position. Dorendorf found paralysis in 12, or 5% in 3% of his cases, while 1% showed the peculiar movement of the cords which has been called ataxic, a much larger proportion than I observed.

(2) In regard to the nature of these disturbances, the only form of paralysis which I observed was abductor paralysis. Of the 6 cases 5 were unilateral and one was bilateral. These were further divided into 3 with partial and 2 with complete abductor paralysis, that is to say, in the former there was marked limitation of outward excursion of the cord and in the latter there was absolute fixation of the cord in the median position.

* Read at a meeting of the New England Otology and Laryngology Society, Nov. 17, 1905.

In partial paralysis the cord at rest is approximately in the cadaveric position. It moves to the median position in phonation, but does not move outward beyond the cadaveric position in respiration. It is not warrantable to make the diagnosis in this stage without repeated examinations at intervals on account of the variation in the excursion of the vocal cords which may be noted in normal individuals. In this connection I will mention one source of error in making the diagnosis of partial paralysis, pointed out to me by Dr. Coolidge, which lies in an asymmetrical position of the larynx not infrequently met with. The larynx being tilted to one side or the other there may be a difference in the degree of movements of the two cords as seen by the laryngoscope which is apparent rather than real.

In complete abductor paralysis there is no difficulty in diagnosis. The cord remains constantly in the median line. At the same time the arytenoid on the affected side is tilted forward depressing the processus vocalis so that the cord appears shortened and at a slightly lower plane than its fellow. There is also some bowing of the free edge of the cord. The change from the condition of partial to that of complete paralysis has been observed by Dorendorf in a few cases.

It is a remarkable fact that in this disease the paralysis should limit itself in the great majority of cases to the posterior crico-arytenoid muscle while all the other intrinsic muscles which are supplied by the recurrent nerve, with the exception of the thyroarytenoid internus are apparently unaffected. Grabow showed conclusively in a number of cases which were at first said that there was a degeneration in the motor fibers of the vagus which supply the recurrent laryngeal nerve, but he found that in a few test not only those fibers which supply the posterior crico-arytenoid, but also those supplying the other intrinsic muscles of the larynx. Recently he has further shown by actually counting the number of fibers which go to the different groups of laryngeal muscles that the crico-arytenoid is supplied with a comparatively small number of fibers, and that the other groups are supplied with a much larger number.

The explanation of this apparent restriction of the paralysis to the abductor muscle seems rather to be that we are concerned with a slowly progressive degeneration of the other intrinsic muscles of the larynx. This is in accordance with the well known fact that the posterior crico-arytenoid is the last to be affected in the degenerative changes in the motor fibers of the vagus in tabes.

The explanation of the fact that the majority of the cases are unilateral and that the majority of the unilateral cases are on the right side is not clear. When the paralysis is bilateral it is usually of the crico-arytenoid internus and thyroarytenoid internus.

A further point of interest is that in the majority of cases the paralysis is unilateral and that the majority of the unilateral cases are on the right side.

Further study of the larynx in tabes is necessary in order to determine the exact nature of the changes in the motor fibers of the vagus which supply the larynx.

in four of my cases, and without paralysis in three cases. These crises are characterized by pain or a sense of irritation in the larynx followed by cough, dyspnea and loud inspiratory stridor. In a mild case the attack closely simulates whooping cough. It begins with a succession of short coughs followed by an inspiratory whoop. Then comes another succession of coughs followed by another whoop, each succeeding whoop being a little severer than the last up to a certain point when the attack begins to subside. There is no distress manifest, and the attack lasts only a few minutes. In severe cases, on the other hand, the attacks are most alarming. The breathing becomes noticeably difficult, the inspiratory stridor is loud and prolonged. The face becomes cyanotic, and in the worst cases the patients fall to the ground, lose consciousness, the breathing stops and epileptiform twitchings occur. Death may occur, but in the great majority of cases the attacks end spontaneously. One of my cases with bilateral abductor paralysis, who had for two or three years laryngeal crises of the most violent type at frequent intervals, almost every day, now has them only once in a few weeks. The attacks have greatly diminished in severity and he has now very little dyspnea. This is probably due to the fact that the adductor muscles are now weakened to such an extent that they can no longer produce strong spasm of the glottis.

I have mentioned the appearance in one of my cases of a jerky movement of the cords in moving from the median position. After phonation the outward excursion of the cord was interrupted, the cord remaining stationary for a moment on its way to the position of abduction. This is the so-called ataxia of the cords reported by Krause, Semon and others. The phenomenon is a comparatively rare one, and its etiological relationship to tabes is not established.

Disturbances of sensibility in the larynx, hyperesthesia and anesthesia have also been reported by other observers, but I did not find any case in which the disturbance seemed marked enough to justify one in classing it outside of normal limits.

(3) With reference to the stage of the disease in which laryngeal manifestations appear, I found that laryngeal crises, when present, occurred among the earliest symptoms in all of my cases. In two the crises led to examination of the larynx and subsequent detection of the disease of the nervous system.

Unilateral abductor paralysis does not of itself necessarily interfere with phonation or respiration. It may, therefore, exist for a long time without being discovered. Lockard reported four cases of abductor paralysis in which other symptoms of tabes were preceded by some months. It is obviously impossible to say in what stage of the disease paralysis of the cords occurs in the majority of cases, but we are justified in inferring that it probably occurs early.

I will close with a brief account of the two cases I saw in which examination of the larynx led to the diagnosis of tabes.

CASE I. April 22, 1905. C. E. C., a colored laborer came to the Throat Department of the Massachusetts General Hospital for treatment of his throat. He stated that his present trouble had begun ten days previously when he was seized in the evening by a violent spasm of coughing associated with a painful strangling sensation in his throat. He could hardly breathe. One or two similar attacks had occurred almost every day since that time. He admitted having acquired syphilis ten or twelve years before, but thought he had long been cured of that and was in good health at the time of his first attack of coughing. He now complained not only of these attacks but of loss of strength and general lassitude.

On laryngeal examination the left vocal cord was seen to remain fixed in the median line during both phonation and respiration. The left arytenoid was tilted forward and the cord was shortened in appearance. The free border was concave. The right cord presented the normal degree of excursion and during phonation met its fellow in the median line, the resulting vocal sound being somewhat roughened.

The patient was then referred to the Nerve Department where he was examined by Dr. Baldwin, who made the diagnosis of tabes on absence of the patella and Achilles reflexes and the characteristic Argyll-Robertson pupil.

This case was, then, one of typical unilateral abductor paralysis in tabes, in which the laryngeal examination gave the first intimation of the essential lesion of the nervous system.

CASE II. The second case, H. B. R., was a man forty-five years of age, who first came under my observation in June, 1904, in the Throat Department of the Massachusetts General Hospital. He had been troubled for several months with a spasmodic cough which he attributed to irritation in his throat.

Although he gave no history of venereal disease, his throat presented numerous evidences of an old ulcerative process which had healed leaving several scars in his fauces and a small perforation of the right anterior pillar. The laryngeal examination was rendered most difficult by the anatomical deformity of the upper part of the larynx, especially the epiglottis. The latter was narrow, curved longitudinally and drawn backward by cicatricial contraction of the aryepiglottic folds. The entire ventricle was constricted, but not sufficiently to offer obstruction to respiration, which was usually free. I was unable to see more than the posterior ends of the vocal cords, but this was sufficient to show that there was a limitation in the outward excursion of the right vocal cord. This observation was confirmed by two subsequent examinations at intervals. I at first attributed the limitation in movement to the cicatricial condition noted. At his second visit, however, the manipulation for making the laryngoscopic examination apparently started a slight attack of coughing which, instead of desisting after I had stopped the examination, increased. A succession of short coughs was followed by an inspiratory whoop which was in turn followed by more coughs and a louder whoop, and so on for several minutes, and then the attack gradually subsided. At the height of this attack the patient was cyanotic and was plainly distressed for breath. He informed me that it was for just such attacks which occurred daily and sometimes several times a day, that he had come for treatment.

This patient was also referred for examination to the Nerve Department where the diagnosis of incipient tabes was made.

The practical conclusion to be drawn from this study from a laryngologist's standpoint is that tubes as an etiological factor, either of vocal cord paralysis or spasmodic laryngeal cough, should never be overlooked.

I am indebted to the staff of the Nerve Department of the Massachusetts General Hospital for their courtesy in allowing me free rein in the examination of their cases of tubes.

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A CONTRIBUTION TO THE ETIOLOGY OF "LATERAL CURVATURE" OF THE SPINE.

BY MAX BÖHM, M.D., BOSTON,
Massachusetts General Hospital.

I wish to present three cases of "lateral curvature" of the spine, which I have had a chance to examine by means of the x-ray during the last week, and which show conditions interesting for the anatomist, biologist and especially the orthopedist. The cases are three girls, J., S., and T., sixteen, fifteen and twenty-three years of age; two of them attend school, one does housework.

Their history shows so few characteristic features, that it does not seem worth while to give it here *in extenso*. I only need to mention that there is no hereditary history of spinal curvature, no history of rickets in childhood.

The present affection came on extremely slowly, in the oldest case five or six years ago, in the two other cases two or three years ago without any symptoms to speak of. The deformity was not noticed first by the patients themselves, but by the aunt or the dress-maker.

The examination shows us three girls of apparently good health and constitution, with no deformities in the extremities, no signs of past or present rickets, no asymmetrical shortening of legs.

The spine deformity, represented and clearly seen in the following records shows in case J. a typical left lumbar with compensation mostly in the cervical part, the rotation on the convex side of the curve. In both other cases S. and T. there is the typical S-curve, more marked in T. than in S.; the rotation is present in lumbar and dorsal region on the convex side, and is still more marked in bending over. There is practically no limitation of the spinal motions. Thus the cases represent what is known to every medical man as juvenile or habitual scoliosis (primarily lumbar).

In each case a careful x-ray was taken. This was done under my supervision with the patient lying flat on the back, as the compression-extractor was used the spine had to be taken in three sections, one overlapping the other. A print of each one was made afterwards and the prints were put together to a full spine. (Röntgen was used only in case J.)

The x-rays show, as to the curvature condition

corresponding to the clinical picture. Lateral deviation and distortion in the whole spine are clearly seen.

The most surprising conditions are offered by the lowest lumbar vertebra. The explanation of these conditions is very difficult for many reasons. In the first place the region has practically never been studied by the radiologist; it offers, furthermore, many anatomical difficulties, for instance, prominences in antero-posterior direction, overlapping each other; a lateral view can hardly be taken, finally as to our special cases here, the conditions seem to me entirely new. For all these reasons it seems to me a very bold undertaking to try to explain the conditions entirely and I am sure my description will be an incomplete one. But it is merely the aim of this paper to call the attention of the orthopedic surgeons and radiologists to these conditions for criticism and further study.

As far as I am able to explain the x-ray pictures, the lumbosacral region gives evidence of an anatomical and apparently congenital malformation in the sense of an incomplete development of a sixth lumbar vertebra with more or less fusion to the fifth lumbar vertebra and to the sacrum. Further studies must explain the details.

That these conditions exist and are already known to the anatomist is shown by the wonderful collection of congenital abnormalities of the spine in the anatomical department of the Harvard medical school, probably the foremost collection of this kind in the world. Professor Dwight had the great kindness to demonstrate this collection to me and gave me the permission to use his specimens for further study and research. I am very much indebted to him.

The very justifiable question will come up: "Granted that my x-ray explanations are right and that the conditions represent congenital malformations of some form in the above-mentioned region, are they only incidental or do they really represent the cause of the spine curvatures in our three cases?" In answer to this question has to be said: The top of the sacrum and the fifth lumbar vertebra are the foundation of the human spine and only as long as this base is normal, that is symmetrical, the symmetrical development of our spine is possible. Consequently, if, for instance, a supernumerary lumbar vertebra between the fifth and the sacrum should occur, the symmetrical development of the spine would not be disturbed, as long as this intercalated vertebra is in itself symmetrical. That is what we see in many of Professor Dwight's specimens. So am I sure there are many individuals who have a straight spine in spite of congenital abnormalities in the lumbar or sacral region. On the other hand the theoretical supposition is justifiable that many of these abnormalities will take place in an asymmetrical way and will disturb the symmetry of the foundation of the spine and, therefore, produce spinal curvatures, partly directly in a mechanical way, partly indirectly by compelling the body to compensate it. There are already anatomical proofs that spinal deformities

ities with the typical lateral and rotatory components can result from the above-mentioned conditions. Breuss and Kolisko¹ publish in their book on the pathology of the pelvis an anatomical specimen, in which the asymmetry of a fifth lumbar vertebra with two arches and two transverse processes produced a spinal curvature, a specimen almost exactly corresponding to our case S.

At this point I wish to warn against comparing spinal curvatures seen in museum specimens and those seen by the x-ray. For anatomical specimens are not subject to muscular action and show the curves only as far as they are due to structural changes; they have furthermore gone through an artificial drying process. On the other hand, the x-ray shows us curvatures as they exist in living persons, due to structural changes as well as to muscular conditions. Although the above question cannot be definitely settled by my three cases, I believe that in these cases the malformation of the lumbó-sacral region is the exclusive and sufficient cause of the curves, and that these three cases represent true congenital deformities.

Few words may be allowed from a developmental point of view. In the development of the species man out from lower species "the ilium travels upward on the spine" (Dwight), a loss of vertebrae takes place gradually. From this standpoint human individuals which have six or five and one-half lumbar vertebrae would represent a lower type of human beings. According to this theory our patients would belong to this class and their deformities are of atavistic character.

The chief places of the spine where this loss or transformation of vertebrae takes place are, according to Rosenberg, the lower lumbar and the lower dorsal region. These places are also known as the primary places for juvenile spine deformities. Further examinations would have to show whether a connection exists between both these parts.

In conclusion I want to mention, in order to prevent any misunderstanding, that I do not claim that the above-mentioned congenital conditions, shown in the x-rays, represent the *exclusive* cause of all "lateral curvatures," not even of the primary lumbar curve. On the other hand, it does not seem to me that these conditions represent curiosities; but the fact that I found inside of one week these three cases seems to me very suggestive, that this cause of lateral curvature is not very uncommon.

Many other interesting points, for instance, the possible treatment, will be made the subject of an extensive report, following this preliminary one.

My best thanks are due to Drs. Goldthwait and Osgood for permission to use the cases.

It is stated that the *Maine Journal of Medicine and Science*, formerly the official organ of the Maine Academy of Medicine and Science, has discontinued publication.

¹ Schulthess in Joachimssthal Handbuch der Orthopädi. Chirurgie, 3. Lief., pp. 681, 710.

Clinical Department.

CONTUSIONS OF THE ABDOMEN.

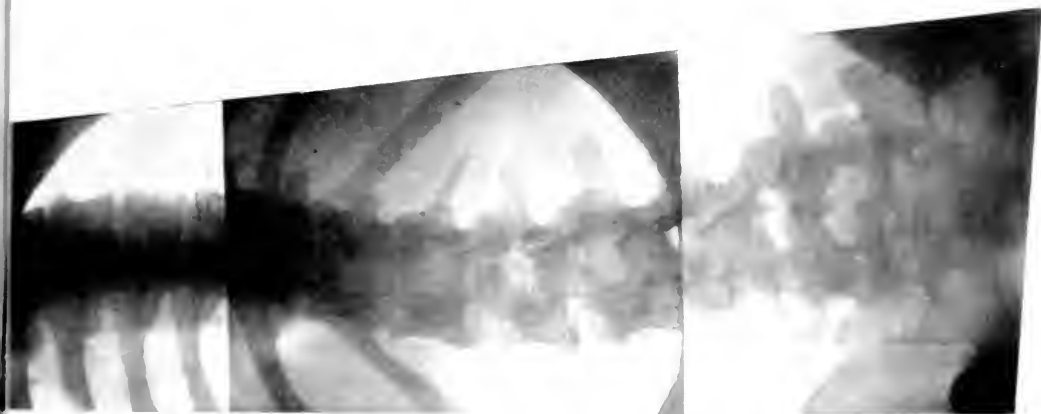
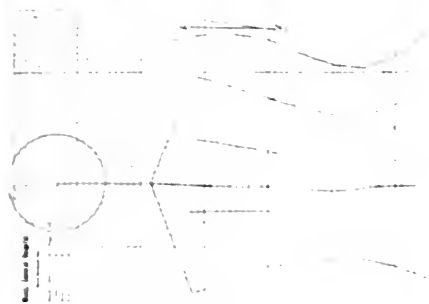
BY JOSHUA C. HUBBARD, M.D.,

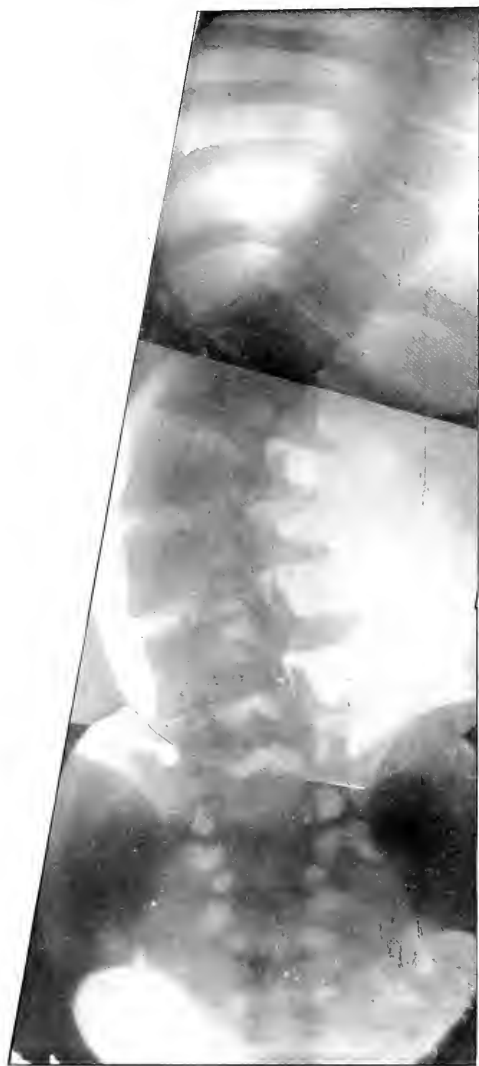
Third Assistant Visiting Surgeon, Boston City Hospital; Physician to Out-Patients, Boston Lying-In Hospital.

WITHIN a comparatively short time I have had the opportunity of seeing several patients whose condition has impressed me with the importance of the most careful observation in cases of contusion of the abdomen, and I wish now to report them, not to bring out anything new in the way of diagnosis or treatment, but simply to emphasize the great difference both in severity and kind of lesion which may be produced by blows upon the abdomen.

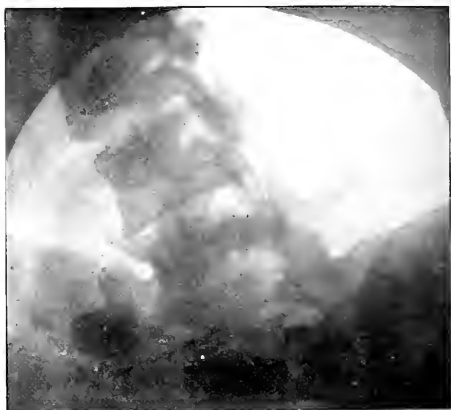
Although it is a well known fact it will bear repeating, that in such cases the extent of the lesion produced bears no relation to the severity of the trauma. Of by far more importance is the condition of the abdominal wall, whether relaxed or contracted, the state of the intestines, distended or empty, and the length of time elapsed since eating or emptying the bladder. No increasing scale of lesions can be made for each increase in the amount of force in the trauma. Blows of but slight force may produce the gravest intra-abdominal injuries in some patients, while others escape without any serious damage from the most severe accidents.

One of the most difficult problems a surgeon has to face is often met in these cases of abdominal trauma. To postpone necessary interference till the diagnosis is certain from evidences of peritonitis or hemorrhage is to be most strongly condemned for by so doing in many cases the life of the patient is simply thrown away. The prognosis depends, in the operative cases, one could almost say, entirely on the length of time elapsed from the receipt of the injury to the operation. For this reason all doubtful cases should be treated until diagnosed with great care even to the minutest detail, for, if the given case prove later operative, every moment spent in reaching a decision affects the prognosis. In most of the operative cases the exact diagnosis of the nature of the intra-abdominal lesion is not made till the operation, and in many of them it would be wrong to wait long enough to make such a diagnosis. The arguments for and against operation should be considered and that is all. When once the decision has been made that an operation is necessary, any time spent in trying to differentiate hemorrhage from rupture of the intestine, for instance, makes the prognosis just so much the worse. The practical differential diagnosis and the one on which the prognosis depends must then be made between contusion of the abdominal wall and injury to the abdominal contents, in other words, whether a given case demands operation or not. I do not wish it understood that I belittle the attempt to diagnose the exact nature of the intra-abdominal injury for that is not so. I simply make this exact diagnosis secondary to the general diagnosis of intra-abdominal trauma.

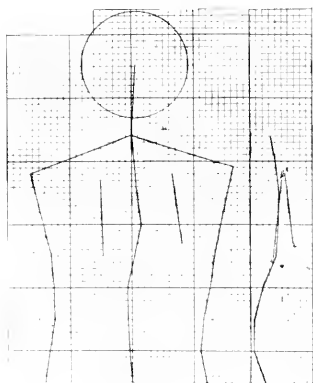




CASE T.



CASE T.



CASE T.

CASE T. Striking asymmetry of last lumbar vertebra; probably additional presacral vertebra, showing left lumbar, right sacral character. On the left fusion to sacrum (?).

A working diagnosis of whether to operate or not cannot be made in a certain number of cases immediately. A given case may have to be observed for perhaps a half hour, perhaps two or three hours, or longer, and the changes in the physical condition noted by the surgeon on whom the responsibility of a decision is to rest. I repeat to emphasize that the one who is to operate must have the opportunity of seeing the patient early, and following the changes himself. No amount of description can ever take the place of a few passes of the hand over the abdomen.

As a last resort to aid in making a diagnosis in those cases whose condition is progressively becoming worse the abdomen should be explored. There is no question about such an exploratory laparotomy being justifiable. A surgeon failing to do so in the cases that become worse in spite of treatment and where the diagnosis can be made in no other way would be guilty of gross neglect.

The following brief report of cases, which are not picked but are taken as they came, shows the multiplicity of lesions which may be caused by a blow upon the abdomen as well as the frequent difficulty of immediately making a diagnosis.

CASE I. L. M., boy of twelve (2) years, was run over by a baker's wagon, both wheels going over his abdomen. When seen right after the accident he was in considerable pain. Physical examination: Pale, in condition of moderate shock. Pulse, 120. Pupils equal and reacted to light. Tongue protruded straight. Heart and lungs negative. No fractured ribs. Slight abrasions across upper abdomen and lower chest. Abdomen presents slight general tenderness and voluntary spasm. No shifting dullness in flanks. No localized tenderness. Urine by catheter, clear. No fracture of the pelvis. Hot flaxseed poultices were applied to his abdomen and his pulse rate recorded at frequent intervals.

The condition of shock and the abdominal spasm at entrance made a diagnosis of some intra-abdominal lesion seem quite probable. His condition, however, steadily improved under treatment and he was discharged from the hospital in three days.

CASE II. F. J., seven and one-half years; male, fell to the ground from the roof of a three-story building. Says he was at first senseless. Physical examination: Pupils equal and reacted. Facies normal. No heaving or Babinski. Tongue protruded straight. Throat negative. Heart and lungs negative. Pulse rate about 120. Knee jerks normal on left, not sought on right. No ankle clonus. No fracture of the spine or ribs. Moderate general spasm of the abdomen, especially in the epigastrium and left upper quadrant where there is a little tenderness. Hot applications were applied to the abdomen and his pulse frequently recorded.

Rupture of the liver seemed a very probable diagnosis and was tentatively held for a few hours when it was found that the flaxseed poultices had done away entirely with all abdominal spasm. He was discharged from the hospital at the end of four days.

In both of these cases it was impossible to tell at once whether there was any intra-abdominal lesion or not. Especially was the diagnosis doubtful in the second case, for the spasm and tenderness were limited so closely to the region

of the liver that rupture of that organ seemed a very probable diagnosis. Both of these cases show how the application of heat to the abdomen by doing away with the spasm due to the constriction of the abdominal wall aids the surgeon greatly in determining for or against operation. The disappearance of the spasm considered together with a pulse rate which was not increasing made the diagnosis almost perfectly definite at once. Both boys received very severe blows and yet escaped serious injury.

CASE III. J. C., thirty-five years, an hour before entrance, fell off his wagon and the hind wheel passed over his chest. Physical examination: General condition fair. In some pain. Alcoholic odor to breath. Pulse, 84. Pupils equal and reacted. Tongue protruded straight. No signs of injury to head. Heart and lungs normal. Considerable tenderness to left lower side of chest. No fracture of ribs. Slight abrasion here of skin. Considerable tenderness all over the abdomen, most marked in splenic and suprapubic regions. Considerable involuntary spasm here. No dullness in flanks. Splenic and liver dullness not obscured. Shortly after entrance vomited two pints. Urine by catheter clear. When seen by me, two and a half hours later, pulse had risen to 120. He was nauseated and vomiting. Complained principally of pain in bladder region. Considerable spasm of abdominal muscles. No dullness in flanks. He was operated on as soon as the preparations could be made. Intestinal contents were scattered through the abdomen. A rupture of the colon was found at the splenic flexure. The patient died a few hours after the operation.

Here the accident was the same as in one of the previous cases but yet how different the result. The most marked feature of this case just before operation was the pain over the bladder with frequent desire to urinate. This was very misleading when an attempt was made to determine exactly the nature of the intra-abdominal lesion.

CASE IV. A. D., thirty-three years, female, had been kicked in the lower part of the chest on the left by her husband, twenty-four hours before entrance. The pain was slight at first, but by night prevented her from lying on the left side. Physical examination: Patient lay on right side with knees flexed. Considerable shock. Skin cold. Mucous membranes pale. Pupils contracted and reacted but slightly to light. Lungs normal. Heart sounds faint. No murmurs detected. Pulse at wrist counted as 90, but very weak, of poor volume and tension. Abdomen lax and protuberant. No muscular spasm. Tenderness in left upper quadrant where an indurated mass was felt. Free fluid in the abdomen. Leucocyte count, 8,000. Patient was operated upon immediately. The spleen was found ruptured and the abdomen was full of blood. Splenectomy was done and the patient recovered. Case reported in *Boston Medical and Surgical Journal*, Oct. 20, 1904.

CASE V. B. F., twenty-two years, male, fell off a cliff twenty-five feet. The fall was broken by a tree. Walked to the very edge and came home. Taken to the hospital. Physical examination: General condition not very good. Pulse 104, all at 100. Quality of pulse variable. Tongue protruded straight. Pupils equal and reacted. No signs of any cranial injury. Heart and lungs negative. No fracture of ribs.

Extremities normal. Abdomen shows considerable general tenderness, most marked in left upper quadrant. Considerable spasm on left. Dullness in left flank. Urine free from blood. A laparotomy was done at once and a fractured spleen removed. The abdomen was half full of blood. The patient made a satisfactory recovery.

One of these patients received a blow certainly of no greater severity than Case I or II and yet suffered a grave abdominal injury. The absence of any muscular spasm in this case (IV) is of interest and would easily at first throw the attending surgeon off his guard.

CASE VI. D. M. L., adult male, was stabbed in the abdomen about 8 p.m. Physical examination: 9 p.m., great shock. Very pale, anemic, perspiring freely. Skin cold and clammy. No signs of injury to head. Pupils equal and reacted to light. Tongue protruded straight. Mucous membranes very pale. Lungs not examined. Pulse, 76 to 80, poor volume and tension. Abdomen slightly distended. Slight dullness in both flanks, otherwise tympanic. No obliteration of liver dullness. Very slight general spasm. No localized tenderness. About one inch above umbilicus and one-quarter inch to left of median line a very small punctured wound. Extremities cold, reflexes normal. Patient refused operation. About 3 a.m. found in marked state of collapse. Pain throughout abdomen. Respiration difficult. Cold. Perspiring freely. Pulse, 140, irregular, poor volume and tension. Considerable abdominal spasm and general tenderness; increased dullness in both flanks. Patient then consented to operation. At operation it was found that the stab wound had not entered the abdominal cavity. An enormous amount of blood was found principally behind the posterior layer of the abdominal peritoneum. The source of hemorrhage could not be found and the patient died. At the autopsy the source of the bleeding could not be found till all of the intestines had been removed and then a hole was discovered in the inferior vena cava large enough to admit the tip of the finger.

CASE VII. A. A., six years, male, was run over by a team, the wheel passing over the left thigh and pelvis. Physical examination: Skin and mucous membrane pale. Pupils equal and reacted. Tongue protruded straight. Very restless. Constantly asking for water. Grunting respiration. Heart and lungs negative. Abdomen moderately distended and somewhat tender throughout, especially on the left side. Dullness in left flank and in suprapubic region. Some spasm, especially on left side. Temperature normal. Pulse, 120. Fracture of left femur and some abrasions. Pulse rose to 140 and 150. Catheter withdrew a half ounce of bright red blood and later an ounce of bloody urine. Four ounces of boracic solution put into bladder and all returned blood tinged. Pulse 160. Abdomen had become distended and somewhat generally rigid. Change in the percussion note in the flanks when patient turned. Exploratory laparotomy was done. Intestines, bladder, kidneys, liver and spleen were all examined by sight or touch without finding any lesion. There was no retroperitoneal hematoma about the kidneys. The patient developed a bronchopneumonia the next morning and died. Before death, was very restless and thirsty. Urine by catheter was high colored, but contained no blood. A partial autopsy was done. The left kidney was ruptured and lay in the midst of a moderately large hematoma. The left lung showed evidences of the bronchopneumonia and also of trauma.

This case shows how, in a certain number of cases, the diagnosis can be made only by an exploratory incision. In this particular case the criticism may be justly made that had the boy not been operated upon he probably would have lived. Because of such dangers as pneumonia, resulting from an exploratory incision, which is usually considered of such slight severity, one should not operate indiscriminately to settle the diagnosis, but should reserve it for those cases which steadily grow worse in spite of treatment and then should not delay a moment.

From these few cases it is obvious that a patient who has received a blow upon the abdomen of any degree of force is in a critical condition and must be under careful observation. For on slight changes in the physical condition depend the diagnosis and often his life. The absence of muscular spasm does not rule out an intra-abdominal lesion while its presence makes such a condition the more probable. Hot applications should be applied to the abdomen and the pulse recorded at frequent intervals. The urine should be drawn by catheter, if the patient is unable to pass it. Should the pulse rate steadily rise even only slowly, or the abdominal spasm persist or the urine be bloody, the case becomes distinctly surgical.

This short paper is not intended to point out when or when not to operate, but to insist on the severity of this class of cases and to make a plea for an early working diagnosis by a surgeon.

BRAIN ABSCESS. OPERATION, RECOVERY.*

BY PHILIP HAMMOND, M.D., BOSTON.

THAT the mortality in cases of brain abscess is heavy, we all know. A glance at the figures of two of our leading hospitals serves merely to emphasize this statement.

Harris¹ reports that for the ten years from 1895 to 1905, there were seven cases of brain abscess at the Manhattan Eye, Ear and Throat Hospital, all of which were fatal.

A careful examination of the records of the Massachusetts Charitable Eye and Ear Infirmary for the same period shows nineteen cases, with two recoveries. Of these nineteen cases, it has been my good fortune to operate upon five, and I am able to show you one of the patients this evening. The other successful case was reported by Dr. Jack recently.¹

J. K., laborer, married, forty-one years old, a resident of Haverhill, presented himself at the clinic of the Massachusetts Charitable Eye and Ear Infirmary, July 7, 1905, for relief from severe earache.

History.—Typhoid fever, at nineteen. Said to have had a discharge from the right ear for six weeks about a year ago. Severe pain in the right ear during the last seven days. No otorrhea. Mastoid tenderness for three days. No vomiting or chills, and no dizziness.

Present condition.—Right drum membrane swollen and bulging; no perforation visible. Slight tenderness at the tip of the mastoid. The hearing for the spoken

*Read at a meeting of the New England Otological and Laryngological Society, Nov. 17, 1905.

¹ Laryngoscope, July, 1905.

voice in the affected ear was three feet, and the Weber was heard in that side.

After freely incising the drum, the patient was placed in bed, the ear douched, and the ice-coil placed on the mastoid.

On July 9, two days after admission to the hospital, he was found on the bathroom floor, unconscious. On recovery, he answered questions clearly, and said that he suddenly lost consciousness while washing his face. He did not remember going to the bathroom, however, until several hours later. When seen a few minutes after the fall, he had labored breathing, and a slow, full pulse. In addition to this there was a bad bruise on the upper lip. He complained of severe pain on the right side of the head.

On the day following the fall the record states that he vomited several times during the night, and complained of being dizzy. There was still some pain radiating over the right side of the head. The pupils were equal and contracted to pin-point size. They reacted very sluggishly to light and distance. The superficial reflexes were equal. It was noticed that there was a foul odor to the discharge from the ear. Examination of the eyes showed no changes in the retina. There was apparently some tenderness on pressure over the cervical vertebra.

He was seen at this time by Dr. Putnam. Although the symptoms were vague, it was decided that it would be better to operate and find out the exact condition of affairs.

Operation.—He was accordingly etherized on this, the third day after his admission to the hospital, and the mastoid exposed in the usual manner. The cortex was found to be sclerosed to such a depth that all attempt to reach the antrum was abandoned. The mastoid tegmen was rapidly removed, permitting the escape of a quantity of very foul pus. A necrotic area was discovered extending through the roof of the middle ear, and over this a small perforation was found in the dura. A director passed upward through this hole allowed a large amount of foul pus and disintegrated brain tissue to escape. The opening in the dura was enlarged, and a probe passed upward 2 to 3 cm. into a large cavity in the temporo-sphenoidal lobe. To secure good drainage the dura was then lifted away from the base of the skull, and the whole roof of the temporal bone taken out. A wick of iodoform gauze was passed into the cavity in the brain, and the mastoid opening packed with the same material. The length of time consumed in the operation was forty minutes.

Following the operation the patient did remarkably well. Drainage was maintained throughout by means of the gauze wick, and at no time was there any question of insufficient drainage, nor was there any hernia cerebri. The patient was up and about the ward on July 24, exactly two weeks after the operation and from that time on convalescence was rapid. The sinus in the brain was closed by Aug. 10, and the patient was discharged from the house Aug. 22. The records state that at this time there was slight discharge from the middle ear, and the posterior wound was fairly clean. The general condition of the patient was excellent, and the hearing in the affected ear practically normal.

Remarks. Among the points of interest in this case may be mentioned the abscess situated, the fact that perfect drainage was established from below, instead of through the squamous portion of the temporal bone and the use of a gauze drain.

Authorities are divided in their opinion as to the most desirable route by which to approach

the abscess. In many cases it would seem better to at least thoroughly explore the dura by removing portions of the tegmen, especially where any portion of the latter is diseased. Particularly is this method of operation applicable where doubt exists as to the portion of the brain involved, as it is as easy to uncover the cerebellum from this point as the cerebrum. Advocates of the opening through the squamous portion of the temporal bone claim the advantage of entering the abscess cavity through a clean surgical wound, and believe that much better drainage is established, because of the larger opening. That a sufficiently large opening can be made through the roof of the temporal bone was quite apparent to all who saw the wound in this case, and there was absolutely no tendency toward hernia of the brain, a complication which becomes very troublesome where a plate of bone is removed from the side of the head.

In regard to the drainage there is also a difference of opinion, some operators relying upon drainage tubes, either hollow, or filled with gauze, and others using gauze alone. In my cases the latter has given most excellent results, and apparently keeps the wound in a cleaner condition.

A CASE OF ACUTE MENINGITIS. OPERATION, RECOVERY.*

BY A. CROCKETT, M.D., BOSTON.

Mrs. E. C. was brought to the Eye and Ear Infirmary in an ambulance in my service, July 2, 1904. The history was that she had had a running right ear since childhood, which had only been treated at long intervals. Nine months before I saw her she had had an attack of severe pain in the head, accompanied by tenderness over the region of the ear and mastoid. Three months later she had another attack of severe pain on the right side of the head accompanied by nausea, vomiting and vertigo. During this attack she was four weeks in bed.

Nine weeks ago she again had an attack of severe pain in the right ear and her family practitioner attempted to do a paracentesis upon the ear. Two days before admission the head ache, which she had had more or less constantly for the last two months, became very severe and she had a loss of consciousness lasting about twenty minutes. Since this time she has had occasional attacks of nausea and vomiting with dull and transient attacks of delirium. She had been confined to her bed through the whole of this time.

The patient was brought in to the hospital in an ambulance in a semi-comatose state and in general appearance was gray and septic. She complained of nausea, vomiting and severe occipital, frontal and right parietal headache. Her temperature was 102° and on examination of the fundus showed double optic neuritis. The right ear was exuding foul smelling exudate, and was completely filled by a large firm red polypus which projected out beyond the concha.

The patient was immediately prepared for operation. Under ether the polypus was hastily snipped off with a large snare. A large amount of pus was washed out of the tympanum and a best probe could be passed into the middle cerebral cavity. A circular incision was then made over the area behind the right ear, and

* Read at a meeting of the New England Otolaryngological Society, August 17, 1905.

with a chisel and rongeur, an opening about two centimeters in diameter. The dura bulged and did not pulsate; it was opened with considerable escape of cerebrospinal fluid; distinct yellow lines of pus could be seen parallel with the vessels on the surface of the brain. The brain was probed downward, forward and backward to a depth of 3 cm, and nothing found. A gauze drain was then placed inside the dura and pushed down towards the petrous portion of the temporal bone, the other end was brought out and through the external skin flap which was then sutured.

The patient made a rapid and uneventful recovery and was discharged from the hospital three weeks after the operation.

This is the second case of acute suppurative lepto-meningitis which I have seen recover, and I believe that many of these cases could be pulled through if operated on at once and a drain put into the subdural space. The cerebrospinal exudate along this drain will relieve the increased cerebrospinal pressure which is what kills most of the patients at once.

In clinics we often see cases that by sheer force of their own vitality survive the first stages of the disease and then pass into a chronic condition in which they may live for weeks. These are the cases that an early operation may pull through. In the case just described the mastoid was not opened at all for the reason that the infection seemed plainly via the roof of the tympanum and the patient was in such poor condition that I did not feel justified in adding to her shock by doing a mastoid operation in addition to the trephining. Her middle ear has since been treated by the ordinary method and is now nearly dry.

GENERAL LYMPHO-SARCOMA ESPECIALLY ACTIVE IN THE THROAT.*

PRELIMINARY REPORT.

BY F. F. EMERSON, M.D., BOSTON.

APRIL 30, 1901, Mr. W. was sent to me by Dr. P. and examination revealed the following condition: Patient, an American merchant, is forty-seven years of age, and was born in Boston. Denies venereal, tobacco or intemperance. Father died at seventy-five of cardiac disease, mother at seventy-four of carcinoma. One brother died of phthisis, one sister of scarlet fever, and one of typhoid fever. At eight years of age, Mr. W. had rheumatic fever which recurred annually for six or eight years. In 1898 he had an intestinal hemorrhage followed by fainting attacks. In 1899, fainting followed by vomiting of blood. In 1900 he developed hoarseness and experienced difficulty in talking distinctly. The *nares* are obstructed almost completely, apparently from collateral edema which does not contract under cocaine enough to give any view of the post-nasal space, or the turbinates. The uvula is club shaped and the size of a pecan. A ridge extends along the lateral walls of the pharynx which is smooth, of a cartilaginous feel and grayish color. Between these is a heaping up of tissue forming a rounded mass which interferes with deglutition. The eyelids are prominent and the conjunctivae, especially at the outer third of the upper lids, forms a partial fold over the eyeball. The lower conjunctivae are dotted with irregular

rounded projections. The bridge of the nose is broadened. The face pale and, except for the intelligent look and quick mentality, one would almost think of myxedema. There is also cervical and inguinal adenitis, but no change could be detected in the spleen or liver. The heart shows moderate hypertrophy with a systolic murmur at the base and an intermittent pulse. His general appearance is that of a man sick with some wasting organic disease. His weight has dropped from 154 to 130 pounds, and he has been subject to so-called bilious attacks frequently, which are followed by clay-colored stools.

His appetite is poor and he has a sense of fullness at the epigastrium accompanied by muscular weakness and general depression. The temperature is normal, his pulse 80 and it intermits about one in seven beats.

Diagnosis: A provisional diagnosis was made of syphilis and antileptic treatment commenced.

May 1, 1901. Examination of urine and sputum was negative. Blood: Hemoglobin 75%. White cells 6,800; red, 3,568,000. Increase in lymphocytes negative. Microscopical examination: This was made at the pathological department of the Boston City Hospital and was from a snipping from the posterior pharyngeal wall. Gross: Spreading growth on the posterior wall of the pharynx, growing down on two sides in ridges as large as the little finger. Piece taken from the growing edge low down. Microscopical: A round cell growth very much resembling lymphoid tissue, showing very few mitotic figures and of evident slow formation. It has in the most part a definite capsule but in places is infiltrating the muscular tissue. The clinical history must be relied upon to determine its malignancy; a large definite tumor growth would suggest sarcoma.

Oct. 22, 1901. Mr. W. had gained two and one-half pounds when he had an attack of acute rheumatism, lasting two weeks. His weight is now 127½ pounds. During this attack his hoarseness, dysphagia and swelling of the lids improved but returned as the rheumatism grew better. Nov. 7, weight 132½ pounds; Nov. 15, 133½ pounds, and Nov. 26, 134 pounds. Dec. 15, slight hemorrhage from the stomach and bowels. Jan. 23, hemorrhage; Feb. 15, 11 P.M., hemorrhage from the bowels, 12.45 and 1.45 from the stomach. The swelling of the eyes and throat diminished. Three days previous to these attacks he had yellow, watery dejections. No epigastric tenderness. The *nares* are now open, and he eats better, but is pale and weak.

March 4, 1902. The pharynx is more swollen laterally and at the lower third. He chokes regularly on trying to eat. The lymphatics in the neck, cheek and eyelids are more swollen. The eyelids at the outer third form a partial curtain over the eyeball. The uvula is two thirds its former size. His pulse intermits every seventh beat. Previous to this examination he had gained from 126 to 134 pounds. His uvula was decidedly smaller and I was loath to change his treatment, notwithstanding the microscopical examination, especially so, as his attack of acute rheumatism and four subsequent attacks of influenza had so interrupted my plans that it was difficult to draw definite conclusions in regard to it.

May 1, 1903. Mr. W. consulted a very careful and experienced observer who made a diagnosis of lupus and suggested arsenic. Beginning with one minim of Fowler's solution, this was increased to thirty, and the treatment extended over a period of one year. It was then omitted one year and resumed for two weeks, and again omitted. The first six months was interrupted by repeated acute infections, but at the end of the year, he was decidedly better. His throat was giving him little trouble, but he was thin and weak.

* Read at a meeting of the New England Otological and Laryngological Society, Nov. 17, 1905.

Sept. 25, 1905. Examination: Hic eyelids are slightly swollen for which he again consults me, but patient says they have not been so for over a year until now. The bridge of the nose is somewhat broad. The nares are free and the uvula is normal. The pharynx is pale and the right lateral wall is a little swollen. No glands, pallor or muscular weakness. No spleen. No hemorrhage for four years. Appetite good. Weight, 154 pounds (normal). The blood shows no abnormal cells and is otherwise negative. Oct. 26, patient has had a hemorrhage from the left nares which saturated two handkerchiefs, and the external swelling on the corresponding side of the nose has diminished, but not on the right.

Reports of Societies.

NEW ENGLAND OTOLOGICAL AND LARYNGOLOGICAL SOCIETY.

MEETING HELD AT THE BOSTON MEDICAL LIBRARY, NOV. 17, 1905.

PHILIP HAMMOND, M.D., SECRETARY.

DR. E. A. CROCKETT read a paper on

SUCCESSFUL TREPHINING FOR ACUTE MENINGITIS.

and DR. PHILIP HAMMOND on

BRAIN ABSCESS: OPERATION, RECOVERY.

DR. J. J. PRENSAM: I regret very much that I was not in time to hear Dr. Crockett's paper, but I am understood the time of the meeting. I judge that the case was one of great interest, because the operation for meningitis has seldom been successful. It certainly should be the dream of the surgeons to eventually learn how to treat the brain more or less with the same success as is obtained in diseases of the abdomen and cavity.

With regard to Dr. Hammond's patient, whom I saw with him, I have very little to say, except that the case was a very obscure one as regards symptoms. When I examined him the question of abscess was discussed, but if I had not seen a very interesting case of cerebellar abscess a short time before, with Dr. Hammond, I do not know how strongly the idea would have been entertained.

It seems to me a very fortunate thing that both otologists and surgeons have shown the propriety of disregarding the sinus in taking off large pieces of the cranial bone. This is especially important with reference to operation on the cerebellum.

Abscesses in this region are extraordinarily silent and give rise to few symptoms, and the diagnosis must be frequently a matter of inference. If it is possible to attack the right half of the brain without danger, as doing much harm, this is still more possible as regards the cerebellum.

In the case of a patient of mine, recently operated on by Dr. Mixter, a good part of the cerebellum was seriously damaged in the search for a tumor, without unpleasant results. Of course there is some danger that septic material may be carried away, but the danger could, perhaps, be guarded against in some cases.

I think that every case of brain abscess should be studied with the greatest care, because I have had very few successful ones in this neighborhood. Dr. Jack, I believe, has had one, but in the history of Dr. Fyfe and Lar. I believe the number of successful

operated brain abscesses are very few. There are several reasons for this, and one of them is that it is sometimes difficult even when the abscess is struck, to know that it has been struck, because the pus is liable to be so thick and gummy that it will not flow through the trocar.

I should like to refer to one more patient. It has recently been shown that the subdural space, and even the brain, can be safely tapped in many places through minute openings in the skull without serious risk. Two writers, who have reported on this matter, refer to some eighty cases with about two hundred tapplings, and assert that even etherization is not always necessary. This method should prove of great value in the differential diagnosis of meningitis.

Is it not true that advantage has been gained in the treatment of ear troubles by the removal of very large pieces of bone? I would also like to ask if the tendency has not been to make very much larger openings through the skull than were made formerly in both kinds of cases; and especially with meningitis cases, if not done very early, would there not be a great deal of benefit to the patient?

DR. RICHMOND: Up to the present time I have had rather unfortunate experiences with my cases of brain abscess, all of them having died. Two of the cases are perhaps worthy of brief notice here in connection with Dr. Hammond's case and the remarks which Dr. Putnam has just made with reference to the obscurity of the cases and the difficulty of diagnosis.

The first case here mentioned I reported some years ago. The patient was a man in middle life who had gone to a general hospital for a slight pain in the head, accompanied with some ear discharge. After a few days' stay he was discharged at his own request, and on leaving the hospital in the afternoon, attempted to walk home, the distance being but a short one. As he did not reach home that evening, a search was made and he was found the next morning in a swamp, practically unconscious and was taken back to the same hospital at noon of the second day, totally unconscious and hemiplegic. Examination of the mastoid and tympanic cavity was negative. I then trephined with the usual round trephine through the squamous portion of the temporal directly above the tympanic cavity. The dura was dark in color, non-pulsating. It was incised, the opening extended about a quarter of an inch into the brain's substance and about two ounces of extremely foul pus evacuated. The patient recovered partly conscious, but lived only three or four days. It is probable that this abscess had become cystic for some time without producing any symptoms, and the case illustrates the always potential danger of a cyst of supplicative otitis media.

In the second case the cerebral symptoms suggested brain abscess and the tympanic cavity contained considerable polypoid degenerated material. The mastoid operation was done, such of the material as could be reached directly into the brain, through the round and evacuated. The difficulty here was one of drainage, and although I used rubber drainage tubes and drainage dressings, gauze was again to everything I could think of in order to get the discharge out of the head, and the discharge was so thick that it was not removed. I thought the patient would survive, but he died two or three days later. I think that in the case of death of a patient from brain abscess, the most stringent precautions were not taken. After death there was no further drainage, and two or three days later the patient was found dead in his bed, and I think there was no drainage. I think the case is a very interesting one, and I think it is a very early case of cystic degeneration of the abscess.

¹ See p. 103.

² See p. 102.

under apparently the same operative procedure. It seems to me often due to the fact that one has lasted a much longer time than the other and the amount of disintegration has become greater. It does not seem to me that in Dr. Hammond's case there could have been such an extreme amount of cerebral disintegration. The nearness of the abscess to the brain cortex and the length of time it has been in existence aid very much in determining the probable course of the disease. The nearer it is to the surface and the quicker diagnostic symptoms supervene, the better the chances for the patient.

I have had a feeling that all of my cases of brain abscess died because of faulty technique, and am encouraged somewhat by the fact that in the cases cited only two out of nineteen have recovered. I have also followed up Dr. Knapp's reports in New York and find that there, also, the mortality from brain abscess is very high. In every case where we have symptoms sufficiently definite I think we should explore for brain abscess and not be dissuaded therefrom by the fact that the mortality is so high.

DR. SPRAGUE: I would like to mention two cases which illustrate the points which have been brought up by Dr. Putnam and the others.

I had two women patients, both housekeepers, who consulted me at the hospital for headache and chronic otitis. I was not suspicious of intracranial complication, as there were no symptoms to suggest it, but operated for chronic otitis. The mastoid in each case was opened, and a fistulous tract was found leading through the roof of the mastoid into the abscess cavity directly over the roof of the mastoid in the lower temporal lobe of the brain. The abscesses were small ones, perhaps about as large as an English walnut. The cavities were curetted and packed with iodoform gauze daily until the cavities were finally obliterated, and the after-treatment was continued as is customary in cases of radical operations for chronic otitis media.

These cases are good illustrations of the obscurity of symptoms in brain abscess and the success obtained by operating through the roof of the tympanum.

DR. JACK: I should like to say one word about the operation for brain abscess. The majority of brain abscesses caused from middle ear suppuration are found in the temporosphenoidal lobe.

In the case to which Dr. Putnam has called attention, a large incision was made through the tegmen tympani. The evacuation of considerable pus was due to the opening (easily done by a knife) of about half an inch of brain substance. The question arose at the time of operating, whether trephining through the squamous bone was necessary for better drainage. It was not done as sufficient drainage seemed established and the danger of hernia of the brain was hereby avoided.

Dr. Hammond's case again goes to prove that trephining is not always necessary in this class of cases. In my experience gauze drainage has not proved a success. In three cases where attempts were made to keep the wound open with gauze, the patient did not do well as the cavity did not seem to be drained properly by the wicks, but after inserting a rubber tube in place of the gauze, drainage was practically complete. At each dressing the tube was placed a shorter distance into the opening until finally the abscess cavity was closed. [In reply to Dr. Putnam's question.] I certainly believe that the removal of large portions of bone has considerable to do with the success in many cases.

DR. CROCKETT: I had one case at the hospital where the man had a cerebral abscess. I probed his brain very freely without finding the abscess, and finally left in a drain. This gave him a great deal of

temporary relief and he improved in many ways, but finally died. It seems to me that I should operate in the way described in my report of this case, in every case of acute septic meningitis, if I could see the case within a few days of the onset.

DR. HAMMOND: The question raised by Dr. Richards also occurred to me. It has seemed to me probable that abscesses which lie near the surface, or those which perforate spontaneously, could more easily wall off infection of the brain tissue than those where long drainage routes have to be established.

The point that Dr. Putnam advances regarding the removal of large areas of bone I think an important one in such cases, as was very well shown in the boy with cerebellar abscess, to whom he refers in his remarks. This boy had a very large cerebellar abscess and it was necessary to remove a considerable portion of the occipital bone. After the abscess was evacuated the boy became very much better, probably on account of the relief from pressure, and I thought he would live, but at the end of three weeks he developed an encephalitis and died.

DR. F. P. EMERSON read a paper on
GENERAL LYMPHO-SARCOMA ESPECIALLY ACTIVE IN THE THROAT.³

DR. FARLOW: Several years ago I saw a patient, fifty years of age, who interested me very much. The soft palate was infiltrated and the posterior and lateral walls of the pharynx showed the same kind of smooth, firm growth as Dr. Emerson described. The condition was not in the least painful. The general symptoms were those of apathy, there existed a certain edema of the face about the eyelids, and also the cheeks, and she had a look of myxedema. I tried all kinds of local and general treatment without success.

I removed pieces of the growth, which were examined microscopically, but this examination gave no satisfactory information. It was considered a mucous infiltration. This case was reported in the *Trans. Amer. Laryngol. Assoc.*, 1896, and I gave it the title of "A Possible Case of Myxedema of the Pharynx." I was ill at the time of the meeting, and the paper was read by title, and not discussed.

I made the diagnosis on the ground that there was myxedematous tissue in the pharynx, the fact that she had dry hair, a sealy appearance of the face, and that the general facial expression was one of myxedema. I do not suggest myxedema in Dr. Emerson's case.

DR. GOODALE: Dr. Emerson's case is very interesting, as it brings before us a class of affections which can be divided into three main divisions. Of these we find first the type of Hodgkin's disease beginning in the tonsils or lymph glands in the vicinity of the tonsils, and running a slow course. A second class is malignant lymphoma of the tonsil where the cells composing the growth are of the small round type, and there is much more rapid growth. The third type is lymphatic leukemia. The line of demarcation between these forms is often slight, clinically, in the early stage. A case which I have seen this week illustrates this point.

A man of forty had a swelling of the tonsil of five weeks' duration, the tonsil extending beyond the middle line and showing ulceration. A number of men had seen him in the West and called the condition Hodgkin's disease. The blood is normal except for slight anemia. Histological examination of this growth shows a very similar condition to Dr. Emerson's case. This case may, at any time, show changes in the blood characteristic of lymphatic leukemia.

I saw a case three years ago in consultation which represented the third type. A student showed sore

³ See p. 104.

of the bladder or of the urethra. The affection was a stubborn one, but the detection of the causes would help greatly in the selection of appropriate treatment.

PROSTATECTOMY.

Dr. W. D. HAINES, of Cincinnati, Ohio, said that two cases, aged respectively forty-two and fifty-nine years, with small indurated prostate with obstruction, occurring in his practice, did well after perineal section and the removal of the gland, in that the catheter was abandoned and a troublesome cystitis relieved. One of the cases suffered incontinence for a period of three months after operation and the cure was incomplete as residual urine was found in both cases, and this despite easy bladder access by the sound or catheter.

The author condemned the use of metallic instruments in prostates for diagnostic purposes, or for the relief of urinary retention, as the danger of perforation and infection far outweighed the meager information or temporary relief thus obtained.

One could confidently hope for complete cure in 30% of the cases submitted to prostatectomy, namely, release from catheter bondage, relief from bladder complications and restoration of urinary function. In his experience with perineal prostatectomy seven cases had been functionally cured, nine showed residual urine, some of whom had had attacks of cystitis and dribbling, and five of these were suffering from incontinence six months to one year and a half after operation. Two cases required secondary operation, one for stone, and one for perineal fistula, making a total of sixteen cases with ages ranging from forty-two to seventy-nine years without mortality. While these results were far from ideal, the unfavorable physical condition present in the majority of them would in a measure mitigate against criticism as to the final outcome of this series.

THE OPERATIVE TREATMENT OF TUBERCULOUS JOINTS.

Dr. HORACE J. WHITACRE, of Cincinnati, Ohio, advocated four kinds of operations for tuberculous joint disease. *First*, osteotomy for the removal of an epiphyseal focus. *Second*, erosion or arthrectomy of those cases, particularly in the young, where the focus was circumscribed and a fair amount of synovial membrane remained. *Third*, excision. *Fourth*, amputation. Osteotomy for the removal of a focus localized in the epiphyseal end of a bone was a most logical operation. Six cases of rather extensive tuberculosis of the knee were treated by arthrectomy or erosion. In four of these cases a complete cure of the disease with a useful stiff joint and good position was attained. In three of the cases a slight amount of motion giving some assistance to the patient in locomotion was regained. In two cases amputation was subsequently resorted to. These subsequent amputations occurred in patients who passed from his observation very soon after operation. They undoubtedly represented recurrence in a spot where the dissection had not been sufficiently thorough.

Excision for a tuberculous joint had been reserved in his practice for those cases in which the bone ends were damaged.

PRESIDENT'S ADDRESS.

The President, Dr. BRANSFORD LEWIS, in his address, considered two subjects: (1) Some unrecognized responsibilities of press and state in conserving health; and (2) the prophylaxis of the so-called venereal diseases.

He called attention to quick medical advertising in newspapers and magazines, and said that news man-

agers provided against discrimination frequently by making unworthy advertisements resemble as closely as possible the regular news material of the paper, or by setting it up as telegraphic matter. He thought the press was *particeps criminis* in presenting such fraudulent material. There was a widely disseminated and growing belief that matters pertaining to sexual physiology and pathology should be taught in a simple way to the budding youth of both sexes in the course of their regular education, in order to place them in a position to resist the temptations that beset young life, by the clearer understanding that such instruction would afford. He would make use of educational channels of all sorts to spread the information desired in a scientific, dignified, truthful and wholesome manner, and such instruction would be received in the spirit in which it was imparted. It was primarily to the education of the people to which we must look for providing either the required legislation or the belated impulse for self-respect and decency on the part of the newspapers in eliminating quack advertisements.

Another subject which he considered well worthy of attention was the determination of practical methods of protecting the people from the far-reaching and disastrous effects of those diseases generally termed venereal, but which were not uncommonly entirely innocent in their development. He referred to gonorrhea, syphilis and chancre. These diseases prevailed to an extent undreamed-of by the people and those in control of the public health of our country.

He believed nothing was to be accomplished by prolonging a discussion as to the propriety of legal control and regulation of prostitution. Instead of trying to do what was impossible, to corral and disinfect all prostitutes, he would teach the public the dangers of prostitution, the dangers of the diseases to which it led, the prevalence of such diseases in daily life, and how they were acquired innocently, how they were to be avoided, and the necessity of seeking relief from them as soon as possible when they were acquired. The campaign of education must be the chief reliance, and the medical profession, followed by the ministry, instructors in institutions of learning in general, philanthropists and leaders in public work, would have to be counted on as the purveyors of such education.

THE PRESENT STATUS OF THE SURGERY OF THE STOMACH.

This was the title of the address in surgery, which was delivered by Dr. W. D. HAGGARD, of Nashville, Tenn. A discussion relative to operation for stomach lesions now was similar to that in regard to appendicitis twelve or fifteen years ago. Then only the desperate cases were submitted to operation. It was so now with many stomach cases. This, however, must yield to the logic of results and in a short time the profession generally would advise early operation as they now well-nigh universally did in appendicitis. Improved technique, low mortality and satisfactory end results would inevitably do away with the empirical treatment of occult intractable stomach troubles.

The typical indication for operative interference was obstruction of the pylorus from an open or cicatrized ulcer causing dilatation of the stomach, with stasis of food. The short circuiting operation of gastro-enteric anastomosis found its ideal indication here, and had given the most beneficial results. It was the *fons et origo* of the present group of drainage operations, as well as other gastric procedures, and was altogether the most perfected and satisfactorily employed operative device. The other complications of ulcer requiring operation were pointed out as (1) perforation; (2) hematemesis of chronic ulcer. Operation was advised in repeated acute hemorrhage or in constantly recurring

The author made a special plea for extirpation in the treatment of cancer of the rectum as being the only procedure that would give hope of a cure. He touched on colotomy as the operation of necessity rather than the operation of choice and urged an examination in all cases where the rectum was involved, as in cases of hemorrhoids, where there were bloody stools, where there was painful defecation, and where there was constipation, and advised a microscopical examination in all cases where the neoplasm was developed. The author showed that the extirpation of a part or the whole of the rectum by the Kraske method was the ideal operation, and should be practiced only by those who have had experience in capital operations.

THE SURGICAL MANAGEMENT OF INJURIES OF PERITONEAL VISCERA RESULTING FROM VIOLENCE APPLIED TO THE ABDOMINAL WALL.

DR. JOHN YOUNG BROWN, of St. Louis, Mo., called attention to the dismal mortality in such cases, and emphasized the importance of their early diagnosis and prompt surgical treatment. He reported a series of six cases, which had come under his personal care during the past eighteen months, in all of which abdominal resection was done. Of the six cases, one recovered and five died.

An analysis of the cases led to one conclusion, namely, the importance of early diagnosis and prompt surgical treatment by abdominal section in all cases of abdominal contusion, in which there were present the slightest symptoms pertaining to injury of peritoneal viscera. If one waited until the classical symptoms of peritonitis were present, surgery promised little.

(To be continued.)

Recent Literature.

Surgical Aspects of Digestive Disorders. By JAMES G. MUMFORD, M.D., Visiting Surgeon to the Massachusetts General Hospital, and Instructor in Surgery at the Harvard Medical School. In association with ARTHUR K. STONE, M.D., Physician to Out-Patients, Massachusetts General Hospital, and Assistant in the Theory and Practice of Physics in the Harvard Medical School. The Macmillan Company, 1905.

The book consists of twelve chapters, to which an appendix, written by Henry F. Hewes, M.D., is added. The place usually given to the Preface is devoted to the "Argument." The first two lines of the Argument are as follows: "The purpose of this volume is an estimate of what surgery may accomplish in diseases of the abdominal digestive organs"; and the hope is expressed that the association of a surgeon and an internist has permitted the deduction of "certain broad and justifiable conclusions."

The purpose of the book has been admirably achieved; the consideration of the subjects is comprehensive but concise, and, as might be expected, the history of both diseases and methods of treatment has been given deserved attention. After a discussion of methods, five of the twelve chapters are devoted to the stomach, two to the bile passages, one to the pancreas, one to abdominal ptosis, and one to the appendix vermiciformis. This is a fair proportion, and it is commendable

that the appendix should be restricted to a single chapter. Frequent references suggest a careful and exhaustive examination of the literature, and opinions or methods of others are often quoted in the original words. The close relation and not infrequent interdependence of disorders of the stomach, bile passages, liver and pancreas are continually emphasized, and the claims of the surgeon are modestly but fairly and firmly presented. The limitations of all diagnostic methods and the difficulties of absolute diagnoses are sharply set forth, and just stress is laid on the extreme technical requirements of certain operative procedures on the stomach and the bile passages.

One hesitates to use the hackneyed expression, "This book should be in the hands of every," etc., etc., but in this case it is literally true. In it the physician may see that the surgeon does not claim everything in the abdomen, and the surgeon may read an impartial estimate of what medicine alone may, as well as may not, accomplish in digestive disorders. Once more is reiterated the too often forgotten fact that the decision *when* to operate should rest with the surgeon as much as *how* to operate, if he is to assume the responsibility of the case; but in the decision *when* to operate, the physician can render him assistance of the first value.

It is a genuine pleasure to read a medical book which possesses, apart from its technical value, distinct literary style and charm, as well as a careful regard for English grammar. Such a combination should not be infrequent, yet it is rarely found in modern American medical textbooks. The authors have given it to us in an exceptional degree, and merit our hearty thanks for so doing.

The letter press and the cuts are excellent, and the book is convenient and attractive, both in size and shape. It is to be hoped that it will attain the widespread success which it deserves.

A Text-Book of Clinical Diagnosis by Laboratory Methods. For the Use of Students, Practitioners and Laboratory Workers. By L. NAPOLEON BOSTON, A.M., M.D., Associate in Medicine and Director of the Clinical Laboratories, Medico-Chirurgical College, Philadelphia, formerly Bacteriologist at the Philadelphia Hospital and at the Ayer Clinical Laboratory of the Pennsylvania Hospital. Second edition, revised and enlarged. Illustrated. Philadelphia and London: W. B. Saunders & Co. 1905.

In eight months Dr. Boston has been called upon to revise his Text-Book on Clinical Diagnosis for a new edition. Seventeen pages of new matter have been added, and slight changes have been made throughout the text, chiefly in relation to certain chemical tests. Cytodiagnosis is given a more prominent place than in the previous edition. The subject in this book is approached largely from the laboratory standpoint, and as such occupies a somewhat different position from the merely clinical books on the same subject. The illustrations are numerous and good.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, JANUARY 25, 1906.

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MASSACHUSETTS SCHOOL FOR FEEBLE-MINDED.

WE turn with interest each year to the annual report of this institution as representing a work well done for the most unfortunate class in the community. The high standard which this institution has set for itself is not only maintained year by year, but definite advance is made and opportunities demonstrated for the further development of the defective classes for which it cares. The year just passed has seen a large increase in the number of inmates, which for the first time has passed 1,000, of which nearly 900 remain at Waltham, and upwards of 100 are at the farm colony at Templeton. The trustees draw attention to the fact that the time is approaching to limit the number of admissions at Waltham, and this number is regarded as 1,000. It is, however, apparent that this number will soon be reached and passed, demanding that other provisions be made. It seems to the trustees the part of wisdom to establish a similar institution, possibly in the western part of the state, which should duplicate the methods and character of care given at Waltham.

It is interesting to observe the progress which has been made at the farm colony at Templeton which was begun a few years ago as an experiment. The crops during the year were prolific and the success of the plan carried out largely through the initiative of Dr. Walter E. Fernald the superintendent, is absolutely assured. A problem of far greater difficulty is the growing responsibility which has come upon the institution in the care of the criminal imbecile. The advent of girls and boys who, in addition to a

certain amount of weak-mindedness, are criminally inclined, has placed upon the management of the institution a responsibility which it was not primarily designed to bear. The influence of these morally imbecile persons is a source of great danger in many ways to the weak-minded children, and leads unless the greatest care be taken, to much demoralization. Such persons should be watched more closely than is ordinarily possible at Waltham, and the question is raised whether it would be desirable to confine them in a separate institution provided with proper means of restraint.

The report of the superintendent includes the usual details regarding the work of the school which may be read with interest by any one with humanitarian instincts. Of the farm colony at Templeton, Dr. Fernald says that this is the most satisfactory and successful department of the school, that the boys are happy and in the best possible health, and that there has been but one serious illness during the year. It is also noteworthy that during the five years since the colony was established no case of tuberculosis has developed. Under the heading "Classification and Methods of Training and Instruction" a valuable summary is given of the school work for which the institution especially stands.

The liberal policy of the institution, which has now been demonstrated for a number of years of permitting students' visits under proper conditions, is altogether to be commended. It is difficult to overestimate the value of one or several visits on the part of students in the more advanced classes of our medical schools. The opportunity is afforded of seeing, and to a certain extent studying, under the direction of the physicians in charge, a very large number of feeble-minded children and, fully as important, the methods of their care. Dr. Fernald has invariably shown the greatest willingness, even at some inconvenience to himself, to encourage such visits and has thereby set an example which may well be followed by other hospitals or institutions of similar character. The visits of students must ultimately be of distinct advantage to the cause of the feeble-minded by attracting them to take up the work of their care and treatment by modern methods. The field is broad and needs many workers.

THE ETIOLOGY OF LATERAL CURVATURE.

Is this issue of the *Journal* a very interesting preliminary report of a research which is expected to be of much value in the elucidation of the etiology

chanics of lateral curvature of the spine. Dr. Max Böhm, the author of this communication, has had a peculiar opportunity to study the subject on which he writes, in his capacity as director of the Mechanico-Therapeutic Department of the Massachusetts General Hospital. He has found that in persons suffering from marked lateral curvature there may be demonstrated by the x-ray a deformity in the vertebrae of the lower spine which leads through simple mechanical means to the physical defect which characterizes spinal curvature. Recognizing the fact that the upper part of the sacrum and the last lumbar vertebra are the foundation of the human spine, it follows that if any defect occurs through faulty development in this portion of the vertebral column, changes must of necessity take place in the superincumbent parts. If the malformation in this lower portion of the spine be asymmetrical, conditions are present for the recognized forms of lateral curvature. This observation, previously recognized in the cadaver, evidently has far-reaching possibilities when applied to the problem of the mechanism of the spine in the living subject. Dr. Böhm's report as given in this issue is preliminary merely, but that it is suggestive will not be questioned, and we shall await with much interest the promised detailed discussion of the question which is to follow. In the meantime the opportunity is given for others interested in the matter to confirm or to bring evidence in disproof of Dr. Böhm's claim. The subject is, as it were, open for general discussion through this preliminary report, and we have no doubt it will receive the attention which its importance warrants.

MEDICAL NOTES.

LEPROSY IN NEW SOUTH WALES. — A recent report on leprosy in New South Wales shows that during the year 1904, 14 persons were reported as suspected lepers; of these, 8 were ultimately admitted to the lazaret under warrants issued after inquiry into each case; but one patient died during the year, an adult male, born in New South Wales of European parents.

PROFIT IN GARBAGE. — The *Journal of the American Medical Association* comments on a paper in the *Scientific American* which discusses the disposal of garbage. The former method of dumping garbage at sea, as practised in New York, has given place in that city to its disposition along the shore in such a way that land may be made. By this means eighty-four acres of

land have been filled in, each acre being worth about \$10,000. Other refuse is used in various useful ways, so that what previously was a loss and expense has now become a positive profit to the city. The suggestions offered might, no doubt, be adopted with profit by other cities.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, Jan. 24, 1906, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 30, scarlatina 41, typhoid fever 16, measles 199, tuberculosis 17, smallpox 0.

The death-rate of the reported deaths for the week ending Jan. 24, 1906, was 20.16.

BOSTON MORTALITY STATISTICS. — The total number of deaths reported to the Board of Health for the week ending Saturday, Jan. 20, 1906, was 243, against 256 the corresponding week of last year, showing a decrease of 13 deaths and making the death-rate for the week 21.29. Of this number 128 were males and 115 were females; 239 were white and 4 colored; 149 were born in the United States, 91 in foreign countries and 3 unknown; 42 were of American parentage, 174 of foreign parentage and 27 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 36 cases and 3 deaths; scarlatina, 34 cases and 1 death; typhoid fever, 11 cases and 3 deaths; measles, 164 cases and 4 deaths; tuberculosis, 40 cases and 30 deaths; smallpox, no cases and no deaths. The deaths from pneumonia were 37, whooping cough 2, heart disease 27, bronchitis 8 and marasmus 4. There were 10 deaths from violent causes. The number of children who died under one year was 42; the number under five years, 65. The number of persons who died over sixty years of age was 60. The deaths in public institutions were 73.

There were 4 cases and 4 deaths reported from cerebrospinal meningitis during the week.

DR. BOWDITCH AN EMPLOYEE AS A FARMER OR A COACHMAN IS. — Our attention has been called to an editorial in the *Clinton Daily Item*, Jan. 20, of which we believe Mr. Parkhurst, a trustee of the Rutland Sanatorium, is the editor. We extract therefrom the following item: "Dr. Bowditch was an employee of the trustees, just as their farmer or coachman is, and the Board therefore supposed it was at liberty to hire him or dismiss him at its pleasure." Drs. Clapp and

to creed, race or color, and under such directions as the trustees or directors of said hospitals may prescribe by rules, and any patient received or admitted to said hospital whose financial means at command are not such as to enable said patient to pay for the necessary treatment and care shall be treated and cared for therein without any expense or charge whatsoever."

NEW HEALTH DEPARTMENT BOAT.—The new boat, "Riverside," of the Health Department, was successfully launched at Port Richmond, Staten Island, on Jan. 18. Mayor McClellan and other city officials were present, and the christening was performed by Miss Dorothea Darlington, the young daughter of the president of the department. The "Riverside," which is one hundred and thirty feet over all and has twin screws, is to take the place of the old "Franklin Edson," which has been worn out in the service, and is to transfer patients from different parts of the city to the hospital for contagious diseases on North Brother Island, in the East River. Her cost is \$75,000.

Obituary.

JAMES ARTHUR MAHON, M.D.

DR. JAMES ARTHUR MAHON was born in Truro, Nova Scotia, Feb. 7, 1865, and died in Boston Sept. 14, 1905. His preliminary education was received in the schools of his native town, in the academy at Pictou, and at Dalhousie College in Halifax. He graduated from the Harvard Medical School in 1896. Prior to and after graduation he served as surgical house-officer in the Boston City Hospital, finishing his course there in 1897. He was visiting physician to the Convalescent Home of the Boston City Hospital, to the Salvation Army Rescue Home and the Home for Incurables. He was a member of the Massachusetts Medical Society, the Alumni Association of the Harvard Medical School and of the Boston City Hospital. He was one of the board of trustees of the Roxbury Presbyterian Church.

Dr. Mahon was a physician of excellent ability and sterling character. He was painstaking and faithful in every detail of his work. He was conservative, yet never lacking in courage. His strong personality won for him many friends, both among his patients and his brother physicians.

The members of the Clinical Club desire to express their satisfaction as they recall their pleasant associations with him and their feeling of loss as they miss his genial presence. They desire further to extend their sincere sympathy to the family of James Arthur Mahon in their great bereavement.

The committee recommends, therefore, that this minute be placed upon the records of the

Clinical Club and that a copy be sent to the family of Dr. Mahon and to the BOSTON MEDICAL AND SURGICAL JOURNAL.

DAVID N. BLAKELY, M.D.
SAMUEL CROWELL, M.D.
EDWARD P. STARBIRD, M.D.

Episcellany.

TESTIMONIAL TO MR. HENRY H. SPRAGUE.

The senior staff of the Boston City Hospital appointed a committee of its three oldest members to prepare a testimonial to Mr. Sprague, for many years a trustee. A letter signed by sixty-nine physicians attached to the hospital, and a silver bowl and platter, appropriately inscribed, were presented on New Year's eve, 1905-06. The letter was as follows:

MR. HENRY H. SPRAGUE:

Dear Sir.—We, the physicians of the City Hospital, on the completion of your thirty years' service as trustee, ask your acceptance of a modest keepsake as a visible token of our respect. Thirty years of service in our hospital, unrewarded in money, can have been only partially compensated for by the estimation in which we hold you. A trustee has not even the worldly reward of a physician to a hospital. We have practice, experience, the opportunity to advance our own knowledge. You have only the consciousness of duty done, of the public good insured. In this you do not stand alone; for a long line of trustees, for forty years, have given us much of their lives.

It is not too much to say, however, that you do stand, if not alone, yet pre-eminent, in conscientious service.

Integer vixit expresses, in terse Latin, your life in the City Hospital. Untiring in your efforts, you have helped to lay its foundations broad and deep in charity and in honesty. No one could have done more to elevate the standard of our duties, and to make our hospital the foremost municipal hospital in position and in reputation. As your character is inseparable from that virtue which is its own reward, so your reputation rests securely behind the unassailable barrier of useful, honorable and charitable works.

DAVID W. CHEEVER,
JOHN G. BLAKE,
OLIVER WADSWORTH,
and sixty-six others.

JAN. 1, 1906.

Correspondence.

A PATIENT'S SUGGESTIONS ABOUT HIP DISEASE.

BOSTON, January, 1906.

Mr. Editor.—Permit me, through your columns, to call attention to some details which I have found of great importance in the treatment of hip disease. I have been a sufferer for half a century from this dreadful affliction, always on the verge of collapse, and too often over the line, and if I had been earlier acquainted with the following points, life would have been far happier and more useful.

Great care is always necessary. For instance, I have had attacks involving weeks in bed, brought on by reclining baths in too short a tub, by sitting in an armchair too narrow between the arms, by a jar in stepping from a high step, and oftentimes by walking too far. There is little pain of the common kind to warn one. Some attacks are heralded by a sensation like a blow on the hip while walking, followed by powerlessness, so that the sufferer has to stand perfectly still for some minutes. Often there is a local nervousness and generally a sore spot

before or behind the hip-joint in the morning, and these warnings mean a rest at once before the attack gets beyond control. The worst symptom is a series of convulsive muscular jerks or spasms which come on at going to sleep, or soon after, sometimes so violent as to shake the bedstead and be felt in the room below, and these attacks are so very bad that it may be months before the following exhaustion passes off. They can be checked to a great extent, and if they are, the attack will probably be very slight, but if they are not, the result is likely to be very serious. It is on this point that I wish to give my experience, for I have found that many good physicians do not give the needed advice.

Some of the remedies that I tried may be easily disposed of. Electricity administered by a skilled physician of standing was injurious. Painting with iodine and with ammonia and covering with porous plaster had no good effect and interfered with more efficient remedies. Massaging and rubbing with various liniments proved injurious. Blisters applied directly over the inflamed spot made it worse. I could not be sure whether an application a handbreadth lower down was good or not, but thought it slightly beneficial, probably due to its keeping me still by its soreness. One autumn, when there were indications of a winter in bed, I had a seton put in by an unwilling surgeon. It was sore, and I am told dangerous, but it worked well, and I was free from any serious attack while it was in, and it was worth the risk. I did not repeat it, for after I learned the use of weight it was unnecessary.

Some things certainly did good. A couple of teaspoonfuls of bromide of soda taken in water in the evening were soothing. Applications of hot alcohol and water had much effect, and upon violent attacks generally a handkerchief wet with rum and water and covered with rubber cloth helped a good deal in getting to sleep. Most important of all is the extension weight in the first part of the night. The mischievous muscular contractions are largely prevented by applying tension to the main muscle crossing the hip in front. A towel folded lengthwise, drawn under the middle of the foot, folded across over the instep and again behind the ankle in a figure 8, with a cord at the bottom running over a bar or pulley at the foot of the bed to a three-pound weight, is a great relief. A canvas ankle cap and a wooden shoe may be used, or any device by which the weight plays freely. A feather bed should be avoided, and the mattress should be convex, with the bed support two inches lower than the calf and hip, and the hair pillow low. The room should be cool. The patient should be careful to avoid any overheating with too heavy bedclothes, or by wool next the skin at the critical moment of getting to sleep. He must, of course, lie on his back. He can usually take the weight off safely after two or three hours and draw on more bedclothes. I found hammocks and low chairs dangerous. A Morris chair or a cane-seated stamer chair was best. The chair used at the desk or the dining table should be some inches higher than an ordinary chair, preferably raised by a rubber cushion.

I have known some women to profit by a steel supporting splint. I tried three or four without much success. The Sayre's splint could not be attached firmly enough to stand walking round much. The only one that worked ran from a brass half-sole inside the shoe, with an ankle joint and a knee joint, the latter springing a trifle past the center and so working well without any lock. The upper end was in a cross-plate fitting above the hip joint with a padded rubber tube covered with a handkerchief changed daily, passing from one end of the plate down between the legs up to the other end of the plate. There was a sliding joint so arranged that by pressing a small toggle-joint the splint could be shortened or lengthened three quarters of an inch, and thus was quite necessary, in order to be worn comfortably with it on. It was held in place by a belt at the waist, padded steel arms and straps at the thigh and calf, and the shoe at the bottom. It was worn inside the trousers and did not show conspicuously. A cane had to be used with it. It lessened the jar at the hip and relieved it of most of the weight, but I do not know that it was any better than crutches or two canes properly used, except in looks. Canes are seldom rightly used. The hand should be slightly curved,

so that the point where the hand rests is directly in line with the shaft; and the cane held with its head against the hip, the lower end, the handle, and the shoulder being in line. Properly handled, two canes will support nearly the whole weight of the body, and the invalid should acquire the habit of taking two whenever he is obliged to take a walk of any length.

The old-fashioned boots pulled on by straps were dangerous. I tried for some months those double boots where the foot is concealed in the ankle of the outer boot. They look better standing, but are not so safe.

It is better to have a support at the feet in bed. I tried first two half hoops crossed and tied so as to make a small dome supporting the bedclothes, but found it better to use a thin board, eight inches square, with a support behind to hold it nearly erect, padded and covered with linen. This holds up the clothes and also gives enough support to the foot to keep it from turning in, and thus relieves the other foot. If the feet are cold a foot-blanket can be wrapped around it with the end brought forward over the feet. The most important of these remarks are those about the night weight, about alcohol, and about the use of two canes. I hope that they may help some one.

H. W. H.

[Our correspondent is apparently in the third stage of hip disease. Had he been born later and thus profited by the advances in the treatment of hip disease of recent years, much of his suffering might have been spared. His experience may prove profitable and his hints useful to others. —Ed.]

CHARLES E. BUCKINGHAM, M.D.

ERRORS IN THE HARVARD MEDICAL SCHOOL HISTORY.

Boston, Jan. 20, 1906.

Mr. Editor: My attention was called by a friend to an error in the recent history of the Harvard Medical School, and this led to my finding another for myself. The statement is made in the biography of the late Charles E. Buckingham: "In his early professional career he was often in sore straits his means were small and he was without family influence. These difficulties did not discourage him. The struggle, however, left its scars, and one finds him afterwards a bitter and sometimes a censorious critic of men possessing those advantages which he lacked."

It is true that his father's business failure while he was in college necessarily cramped him, and it is conceivable that as his father had objected to his choice of a profession, he may have hesitated at asking for introductions that might easily have been given. To suppose, however, that this led to a mean jealousy of others is incompatible with his character, as I knew it in later life. This might be merely my opinion, but I expect to be believed when I say it is incompatible with his later relations to men of his own age, who were abundantly supplied with what he is said to have lacked. If better fortune in others had led to bitterness, bitterness should have been common toward all who had better fortune, but it was not. The writer of the biography may have seen him bitter, but has misinterpreted the facts.

The other error is more serious. When Harvard enlarged its faculty and adopted the plan of a continuous whole year session it won over Bacon, F. H. Clark, Buckingham and others to its teaching staff. This fact so crippled the Bowdoin Medical School that little is heard of it afterward. This misstatement is easily corrected. The original record of the corporation of that school is in my desk as I write. It shows that Dr. Buckingham was present at most of the meetings from the beginning to the end, and that he was clerk both of the meeting in 1855 which directed instruction to be suspended until the next meeting of all April 15, 1858. (Year was 1858, not 1857, in its edition of O. C. 19, 1857 gives the original appointment in Harvard as a matter of course. It is true that no action in 1856 can have determined a course that took place ten years or even seven years later.)

Truly yours,

EDWARD M. BUCKINGHAM, M.D.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JAN. 13, 1906.

| CITIES. | Population. Estimated for 1905. | Percentage of deaths from | | | | | |
|-------------------|---------------------------------------|-----------------------------|-----------------------------|-------------------------|-------------------------|--------------------------|-------------------|
| | | Reported deaths in each. | Deaths under five years. | Infectious diseases. | Acute lung diseases. | Diphtheria and croup. | Typhoid fever. |
| New York . . . | 1,525 | 468 | 21.90 | 24.05 | 4.66 | — | 3.39 |
| Chicago . . . | 582 | 143 | 22.33 | 19.68 | 1.89 | — | 1.54 |
| Philadelphia . . | — | — | — | — | — | — | — |
| St. Louis . . . | — | — | — | — | — | — | — |
| Baltimore . . . | 135 | 49 | 21.51 | 17.43 | 2.05 | — | 2.56 |
| Cleveland . . . | — | — | — | — | — | — | — |
| Buffalo . . . | — | — | — | — | — | — | — |
| Pittsburg . . . | — | — | — | — | — | — | — |
| Cincinnati . . . | — | — | — | — | — | — | — |
| Milwaukee . . . | — | — | — | — | — | — | — |
| Washington . . . | — | — | — | — | — | — | — |
| Providence . . . | 67 | 17 | 20.90 | 22.39 | 4.18 | — | 1.49 |
| Boston . . . | 692,528 | 198 | 66 | 13.65 | 27.27 | 1.50 | 2.50 |
| Worcester . . . | 131,171 | 41 | 16 | 7.32 | 21.59 | — | — |
| Fall River . . . | 103,943 | 28 | 13 | 21.45 | 21.45 | — | — |
| Cambridge . . . | 98,583 | 19 | 5 | 13.39 | 21.45 | — | — |
| Lowell . . . | 94,889 | 38 | 11 | 15.79 | 21.05 | — | — |
| Lynn . . . | 78,871 | 13 | 2 | 30.77 | — | — | — |
| New Bedford . . | 77,096 | 25 | — | — | 16.00 | 1.00 | — |
| Springfield . . . | 74,592 | 22 | 4 | 4.35 | 27.27 | — | — |
| Lawrence . . . | 71,653 | 28 | 12 | 7.14 | 25.00 | — | — |
| Somerville . . . | 70,908 | 14 | 4 | 33.71 | 21.93 | — | — |
| Holyoke . . . | 50,824 | 19 | 3 | 10.53 | 21.05 | — | — |
| Brockton . . . | 49,511 | 13 | 4 | 7.03 | — | — | — |
| Malden . . . | 38,958 | 13 | 9 | 24.08 | — | — | — |
| Salem . . . | 37,590 | 8 | 2 | 12.50 | 25.00 | — | — |
| Chelsea . . . | 37,568 | 16 | 5 | 25.00 | 18.18 | 6.25 | 6.25 |
| Haverhill . . . | 37,362 | 11 | 1 | 27.27 | — | — | — |
| Newton . . . | 37,512 | 11 | — | — | — | — | — |
| Fitchburg . . . | 34,337 | 10 | 1 | — | 30.00 | — | — |
| Taunton . . . | 30,967 | 12 | 4 | 8.33 | 33.33 | — | — |
| Everett . . . | 30,153 | 12 | 1 | 16.67 | — | — | — |
| Quincy . . . | 28,996 | 7 | 1 | 14.29 | — | — | — |
| Waltham . . . | 26,881 | 6 | 1 | 16.67 | 16.67 | — | — |
| Gloicester . . . | 26,011 | — | — | — | — | — | — |
| Pittsfield . . . | 25,762 | — | — | — | — | — | — |
| Brookline . . . | 24,267 | 4 | — | 25.00 | — | — | — |
| North Adams . . | 22,150 | 6 | 1 | 16.67 | — | — | — |
| Chicopee . . . | 20,402 | 7 | — | 24.29 | 28.57 | — | — |
| Northampton . . | 20,255 | 3 | 1 | 12.50 | — | — | — |
| Medford . . . | 19,988 | 7 | 1 | — | — | — | — |
| Beverly . . . | 15,506 | 2 | 2 | 28.57 | 28.57 | 14.29 | — |
| Hyde Park . . . | 14,777 | 5 | — | — | — | — | — |
| Newburyport . . . | 14,715 | 1 | 1 | 10.00 | — | — | — |
| Leominster . . . | 14,578 | 6 | 2 | 16.67 | 33.33 | — | — |
| Melrose . . . | 14,432 | 6 | 1 | 33.33 | 33.33 | — | — |
| Woburn . . . | 14,168 | 2 | 2 | 50.00 | — | — | — |
| Marlboro . . . | 13,887 | 3 | 1 | 33.33 | 33.33 | 16.67 | — |
| Westfield . . . | 13,438 | — | — | — | — | — | — |
| Peabody . . . | 13,168 | 4 | 1 | 25.00 | — | — | — |
| Revere . . . | 13,168 | 4 | 1 | 25.00 | — | — | — |
| Clinton . . . | 12,965 | 1 | — | 100.00 | — | — | — |
| Attleboro . . . | 12,965 | — | — | — | — | — | — |
| Adams . . . | 12,775 | — | — | — | — | — | — |
| Gardner . . . | 12,267 | — | — | — | — | — | — |
| Milford . . . | 12,256 | — | — | — | — | — | — |
| Weymouth . . . | 11,688 | 5 | 0 | 20.00 | — | — | — |
| Franklin . . . | 11,598 | 2 | — | 50.00 | — | — | — |
| Watertown . . . | 11,597 | 2 | 0 | — | — | — | — |
| Plymouth . . . | 11,432 | — | — | — | — | — | — |
| Southbridge . . . | 10,206 | 4 | 1 | 50.00 | — | — | — |
| Wakefield . . . | 10,476 | 3 | — | — | 66.67 | — | — |
| Webster . . . | 10,280 | — | — | — | — | — | — |

* NOTE. — The populations of the Massachusetts cities and towns are estimated from the rate of growth from 1900 to 1905. The figures for Lowell, Taunton, Gloucester, North Adams and Clinton were allowed to stand in 1905, these places having shown no growth during the five-year period mentioned.

Deaths reported, 3,024; under five years of age, 871; principal infectious diseases (smallpox, measles, cerebrospinal meningitis, diphtheria and croup, diarrheal diseases, whooping cough, erysipelas, fevers and consumption), 677; acute lung diseases 674, consumption 321, these figures having shown no growth during the five-year period mentioned.

From whooping cough, New York 3, Chicago 2, Baltimore 4, Lowell, Lawrence and Brookline 1 each. From scarlet fever, New York 7, Chicago 8, Providence 1, Boston 1, Brockton 1. From cerebrospinal meningitis, New York 26, Boston 2, Lynn, New Bedford and Newburyport, 1 each. From erysipelas, New York 5, Chicago 2, Baltimore 1, Woburn 1. From typhoid fever, New York 6, Chicago 9, Baltimore 5, Providence 1, Boston 5, Lowell 1, Lynn 4, Lawrence 1, Holyoke 1, Chelsea 1, Westfield 1, Revere 1. From measles, New York 15, Providence 1, Boston 3, Worcester 1, Cambridge 1. From

diphtheria and croup, New York 62, Chicago 11, Baltimore 4, Providence 3, Boston 3, New Bedford 1, Haverhill 2, Chelsea 1, Beverly 1.

In the seventy-six great towns of England and Wales, with an estimated population of 15,818,360, for the week ending Jan. 6, 1906, the death-rate was 18.3. Deaths reported 5,548; acute diseases of respiratory organs (London) 225, whooping-cough 120, diphtheria 70, measles 141, smallpox 0, scarlet fever 61.

The death-rate ranged from 9.0 in Walthamston and Rhondra to 30.5 in Preston; London 19.4, West Ham 18.5, Brighton 19.1, Southampton 15.6, Plymouth 15.9, Bristol 30.5, Birmingham 17.9, Leicester 17.7, Nottingham 19.9, Birkenhead 20.0, Liverpool 23.9, Wigan 19.1, Bolton 14.3, Manchester 17.4, Salford 18.0, Halifax 18.6, Bradford 19.9, Leeds 21.5, Hull 16.7, Sheffield 15.8, Newcastle-on-Tyne 16.7, Cardiff 17.9, Merthyr Tydfil 16.7, Kings Norton 11.5, Hanley, 21.2.

METEOROLOGICAL RECORD.

For the week ending Jan. 13, in Boston, according to observations furnished by Sergeant J. W. Smith of the United States Signal Corps:

| DATE | Barometer. | | Thermometer. | | Relative humidity. | | Direction of wind. | | Velocity of wind. | | Weather. | | Rainfall in inches. |
|--------------|-------------|-------------|--------------|----------|--------------------|-----------|--------------------|-----------|-------------------|-----------|-----------|-----------|---------------------|
| | Daily mean. | Daily mean. | Maximum. | Minimum. | 8.00 A.M. | 8.00 P.M. | Daily mean. | 8.00 A.M. | 8.00 P.M. | 8.00 A.M. | 8.00 P.M. | 8.00 A.M. | 8.00 P.M. |
| J. 7. 30.06 | 30.34 | 27.56 | 62 | 35 | N | W | W | 12 | 14 | C. | C. | 0 | 0 |
| M. 8. 30.20 | 30.25 | 16.58 | 62 | 35 | N | W | W | 12 | 14 | C. | C. | 0 | 0 |
| T. 9. 30.08 | 19.28 | 10.69 | 68 | 38 | N | W | W | 12 | 15 | O. | C. | 0 | .05 |
| W. 10. 30.46 | 18.26 | 9.72 | 70 | 31 | N | W | W | 8 | 12 | C. | C. | 0 | 0 |
| T. 11. 30.56 | 25.33 | 15.76 | 66 | 27 | N | W | W | 8 | 12 | C. | C. | 0 | 0 |
| F. 12. 30.31 | 44.54 | 34.85 | 69 | 27 | N | W | W | 6 | 8 | O. | C. | 0 | .07 |
| S. 13. 30.40 | 35.37 | 33.57 | 66 | 62 | N | E | N | 15 | 26 | O. | C. | 0 | 0 |
| 30.30 | 34.21 | 69 | | | | | | | | | | | .12 |

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow; X., below zero. † Indicates trace of rainfall. ‡ Means for the week.

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING JANUARY 20, 1906.

JOHN E. PAGE, passed assistant surgeon. Ordered to the "Franklin," Norfolk, Va.

(Orders issued by commander-in-chief of Asiatic Fleet.)

H. G. BEYER, medical inspector. Detached from the "Wisconsin," and ordered to the "Ohio."

G. H. BARBER, surgeon. Detached from the "Ohio," and ordered to the "Wisconsin."

J. C. THOMPSON, surgeon. Detached from the "Lawton" and ordered to the "Cincinnati."

W. H. BECHER, surgeon. Detached from the "Cincinnati" and ordered to the "Lawton."

SOCIETY NOTICES.

PRIZE FOR BEST ESSAY ON ETIOLOGY OF EPILEPSY.—The National Association for the Study of Epilepsy offers a prize of \$300 for the best essay on the "Etiology of Epilepsy." Papers in competition must be handed in by Sept. 1, 1906.

THE BOSTON CITY HOSPITAL ALUMNI ASSOCIATION.—This Association will hold its annual meeting at Hotel Parkers, 270 Commonwealth Avenue, between Fairfield and Gloucester streets, on Wednesday evening, Feb. 7, at 6.30 o'clock. Dinner will be served at 7 o'clock, immediately after the business meeting. Dr. Charles H. Williams will preside.

WILLIAM H. ROBEY, JR., M.D., Secretary.

THE HARVEY SOCIETY, NEW YORK.—The sixth lecture in the Harvey Society course will be given by Prof. Lowells F. Barker, of Johns Hopkins University, at the New York Academy of Medicine on Saturday, Jan. 27, 1906, at 8.30 P.M. Subject, "The Neurones."

GEORGE B. WALLACE, M.D., Secretary.

RECENT DEATH.

EMERSON WARNER, M.D., M.M.S.S., died in Worcester, Dec. 24, 1905.

Address.

THE PROBLEM OF PSYCHIATRY IN THE FUNCTIONAL PSYCHOSES.*

BY EDWARD COWLEY, M.D., BOSTON.

IN the study of mental diseases it is important to find their true place in relation to other pathological conditions. Our conceptions of the nature of mental symptoms should be framed in harmony with the true principles of general pathology. These are essential requisites for the progress of psychiatry. I shall try to present some considerations to this end in discussing my subject: The problem of psychiatry in the functional psychoses.

It is essential here, as in all such inquiries, to have a clear understanding of the terms of the problem; words and phrases and the formulae of principles should have correct and definite meanings. Our ideas may be embodied at first in words which seem to express exactly all that we know; but as our conceptions tend to outgrow their verbal expressions these may gain the larger import and lose the narrowness of their derivations; or being used in an earlier and more or less restricted sense, they hamper thinking in the shackles of authoritative phrases that obstruct reasoning, and single words may perpetuate error and lead to confusion of interpretation and discussion. The dicta of general principles accepted as fundamental may sometimes harbor hidden fallacies and prove to be untrue after having long retarded process. It is a necessary part of this discussion to examine first some definitions and the formulae of certain accepted principles and the doctrines drawn from them.

The terms in which the present subject is expressed contain no ambiguity as to its meaning to lay down the proposition that the problem of psychiatry is to be found in the functional psychoses, meaning here mental diseases. But something needs to be said defining the true province of psychiatry; and the words "functional psychoses" lead at once into the maze of difficulty surrounding the relations of functional and organic diseases. In the definition of disease as "any morbid deviation from normal health," the important distinction is drawn between organic or structural diseases in which there is a lesion or pathological condition of some part of the body, and functional diseases in which there is an irregular action of a part but without organic abnormality. But keeping to this distinction, it is a remarkable fact that the word "psychosis" is used in opposing senses in mental physiology and mental pathology. The physiologists, having regard to the normal processes, use "psychosis" as "equivalent to the mental or psychical element in a psychophysical process, just as neurosis refers to that aspect of the process which belongs to the nervous system." On the other hand, in psychiatry the word "psychosis"

is used pathologically and "designates an abnormal mental condition"; it is described as a typical form of insanity ("disease-form") which can be scientifically differentiated and correlated with a specific "disease-process," and the usage implies a structural change. In neurology "neurosis" is also changed from its normal functional sense in psychology and used to designate a "morbid or diseased condition." "Functional neurosis is a morbid affection of the nervous system known only by its symptoms, and without anatomical basis. It is doubtless true that an anatomical lesion of some kind does in each case exist, and the classification of diseases as organic and functional is but a concession to our ignorance."¹ These instances afford examples of looseness of usage in two most closely interdependent lines of research showing the disharmony between them that tends to confusion of understanding. It is allowable to speak of the neuroses, and the meaning is plain as referring quite exclusively to functional disorders; but to constitute a true psychosis, in the pathological sense, it must have a definitely differentiated symptom-complex that can be designated as a "disease-form"; this is commonly spoken of as a clinical "entity," and it implies a correlated "disease-process." We may speak of acute and chronic psychoses, or of organic psychoses, to distinguish the insanity due to cerebral disease. But the psychoses proper being conceived as real disease-entities, when in psychiatry we wish to speak of the group of minor and often temporary variations of the mental functions, parallel or corresponding to the neuroses in neurology, the word "functional" must be added and the term "functional psychoses" used as in the subject of this discussion.

THE POSITION OF PSYCHIATRY AS SHOWN BY CURRENT TEACHINGS.

The point of view of this inquiry is that of general medicine for one who, without predilection and looking for light on all sides, approaches the field of psychiatry and tries to understand its problems. In seeking the true place of mental diseases in relation to other pathological conditions, and in order to harmonize his conceptions with the true principles of general pathology, it is found at the outset that the functional psychoses are to be regarded as being in contrast with the psychoses proper associated with assumed structural changes and "disease-processes," or with definite organic diseases of the brain. Here, as in general medicine, this distinction of functional and organic disease appears to be an expression of the dominance of morphological conceptions in medical knowledge. Diseases due to obvious structural changes can be understood and subjected to treatment and surgery; but the bodily diseases called "neuroses" for which there is no pathological anatomy constitute a very large group.

Although there is a greater reason for this being true also of functional mental diseases, the

* Address presented by Dr. Edward Cowley, chairman of the Section of Psychiatry of the International Congress of Arts and Sciences at St. Louis, September, 1904.

¹ Baldwin, *Theory of Phobias and Neurosis*.

quirer finds in the psychiatry of the time small interest in them. It is a very old idea that the different forms of insanity may be explained by the study of the brain and its degenerations. The history of modern psychiatry shows that it has given great emphasis to these morphological conceptions by its precise methods and achievements in histological investigations of the brain. In recent years the German schools have been the centers of interest. The environment of their origin had pre-eminently the morphological stamp. Thus the effort to determine definite "disease-forms" and "disease-processes" has been a distinctive characteristic of modern teachings in the search for anatomical correlations and explanations. The application of the scientific method in clinical study has been most fruitful of admirable results. The "disease-process" assumption has been stimulating and helpful as a spur to morphological investigation, which all agree should be carried to the utmost. But with the inheritance of such conceptions the modern movement has been characterized also by the continuance of the quest for mature forms and types and for their systematic classification. The pathological principles being embodied in the designations "disease-form" and "entity" and "disease-process," the consistent use of these has implied that every such pathological process should have its cause, course and outcome. A psychosis thus constituted is held to present the attributes of scientific truth, although some actual morphological characters that furnish complete and proper proof may yet be wanting.

While these teachings have been taking form in the last twenty years, the influence of modern psychology has been felt and is becoming apparent, especially in the last half decade. Although psychological studies of mental functions are viewed with much of the same distrust as before, the experimental method, in its clinical use in psychiatry, excites interest by the objective character of its results; they have the value of observed and measurable facts of function which may contain the promise of being ultimately traceable to facts of structure.

The present results of this movement are exceedingly interesting and promising, although it is true that there is much diversity in the products of these methods of study. With the increasing number of observers the more variations there appear to be in the interpretation of the phenomena. This is shown in the differentiation of named "disease-forms," and by a comparative study of some new classifications.² This, however, is a hopeful stage of progress. In the extreme view it has been held to be unreasonable that any conclusions can be drawn from the psychical activity of a diseased brain; psychological explanation is of no value, it is said, without an objective measure in definite "disease-processes" in the cortex. According to other views, in which the conception of a "disease-process" is still fundamental, conditions that do

not lead to deterioration are conceived to be of a "special type"; and a "biological entity" is conjectured as representing "a special kind of disease-process or disease-principle." Again, under broader conceptions, it is held that more than one point of view is needed to do justice to psychiatry, and a special psycho-pathology is founded upon normal psychology. But this meets with criticism as giving undue prominence to psychological distinctions inconsistent with a true medical conception of disease.

The influence of the new German schools has been strongly felt in other countries. But the inquirer, extending his survey in these directions, finds that the cotemporary interest in the physiological aspects of psychiatric problems has not waned, though they are somewhat overshadowed. In Italy, for example, Ferrari has studied the pathology of the emotions, as has Féré in France, where Ribot has done the most to elucidate the relation of mental experience to the personality, and Janet has made his remarkable contributions to future psychiatry by the analysis of mental instability in the borderland of insanity. The British alienists have conservatively given attention to functional as well as to anatomical conceptions, notably Mercier. Hughlings Jackson has magnified his distinction as a neurologist by his recognition of the importance of the physiological factors in nervous and mental disease; his method of reasoning from functional characteristics to interpret structure, instead of inferring function through proofs in structure, is now attracting renewed interest.

These English views have long held a like formative place in America, where they have not lost, but have sustained their force during the decade since the introduction of German teachings. Attention was first attracted especially to Kraepelin and his methods at the Heidelberg clinic with a consequent intensification of interest in morphological conceptions qualified by clinical observation. The painstaking studies of Meyer and Hoch approached the subject from the neurological side loyal to the scientific method; through their work the conceptions of Kraepelin were submitted to the tests of practical co-operative study and experience with results anticipating his own later simplifications of "disease-forms." There was also, not only the establishment of collections of admirable clinical records, valuable for further study and analysis in future, at the McLean Hospital and the Worcester Insane Hospital where this special work began, but the extension of this clinical method to many other hospitals. Later in the movement came the different interpretations of psychiatric problems by Wernicke and Ziehen, — the latter with an especially hopeful attitude toward psychological explanations. There has appeared a tendency to change in the views of these German teachers, of whom it is said they "have emancipated psychiatry from the peculiar position of an adjunct to neurology," — a position for which the claim has long been made and is not yet yielded.

² Meyer, A.: *A Few Trends in Modern Psychiatry*. The Psychological Bulletin, vol. i, 1904.

In the outcome of the decade in America the intensity of the new teachings is being qualified by independent studies of the problems involved, and the continuity of the current of earlier views here has been maintained. This former trend has persisted not only in psychiatry, but it has appeared in neurology which was formed in, and has held to, pronounced morphological conceptions. Dana, Putnam and Prince, for example, have taken special interest in the physiological and abnormal aspects of mental phenomena. Herter has made the most noteworthy contributions to the future understanding of mental as well as nervous diseases, by studies of the chemistry of pathological physiology and the disorders of nutrition and metabolism in seeking the fundamental principles of practical therapy. Traceable here, as in general medicine, is the influence of the immensely important work of Chittenden; while this has little or no place in German teachings of neurology and psychiatry, the chemical side of the composition and activity of nervous tissues is receiving attention in England. In recent years, through the special studies of Mott and Halliburton, which, however, relate distinctly to changes in structural disease. In America, the trend toward functional conceptions of mental pathology became embodied, with a special motive inspiration from general medicine, in the work of the McLean Hospital more than two decades ago. Early in this period, under the added influence of the new teachings of physiological chemistry, the purpose was developed which has led, in the last half decade, to Folin's chemical investigations of disordered metabolism in immediate connection with the clinical study of the physical conditions and treatment of the insane; the parallel development, on both physical and mental lines, of the original purpose there is also finding its prime expression in the recent establishment of another clinical laboratory in which Franz is applying the physiological and experimental methods of the trained physiologist and psychologist. This particular development of the tendency to studies of the physiological aspects of psychiatry has been characterized throughout by its essential purpose of seeking guides for treatment of the physical conditions associated with functional mental disorders.

It appears that the turning away from the barrenness of histological provings is becoming general; the improvements of the clinical method and psychological experiment are inevitably drawing attention to the closer observation of the individual patient, and to the better study of the minor causes of his mental variations; this means a trend toward physiology. It is a safe prediction that pathological physiology is to be called to render such aid to psychiatry as it is giving in general medicine; and that the extraordinary advances in pathological chemistry will become available in mental diseases.

Such are some of the considerations suggested by a survey of the present aspects of the field of psychiatry. The changing attitude of psychi-

atry toward psychology is of great significance. These circumstances guide the inquiry into the conditions and causes of the present position of psychiatry.

THE RELATION OF PSYCHIATRY TO GENERAL MEDICINE.

Psychiatry belongs to general medicine.³ This view has been presented in the annual reports of the McLean Hospital since 1882;⁴ my first statement of it, in the report of that year, was to the effect that the physiological basis of the treatment of the insane lies in the fact that the normal functions of the cerebral organ may be only temporarily disturbed or only partially impaired, whether by transient disorder or pathological change; and the consequent fact that, in most cases, some degree of normal function remains. This principle was stated to be in accordance with the most important gain of modern pathology, the modern conception that "Disease is, for the most part, normal function acting under abnormal conditions."⁵

Mental diseases, in their study and treatment, include more than is contained within one branch or department of general medicine by having to deal with the mental effects of pathological conditions of the whole body; psychiatry is not limited especially to the nervous system with its central organ, which has functions of a wholly different and higher nature than those of any other organ. There are functions of the brain other than the common ones of receiving impressions and reacting uniformly upon them like a reflex mechanism; by its mental function it receives impressions, retains and recalls its conscious experiences, selects from and rearranges them, and in new and orderly forms initiates and controls the processes of motor expression. The psychiatrist newly attempting the precise study of mental symptoms is confronted at the outset with the oldest of problems, the relation of mind and body. If he turns to physiology and neurology for light upon the physiological terms, mental and physical, of his problems, he meets everywhere such statements as that of Wundt: "In matters psychological the naturalist can only affirm that psychological phenomena run parallel with physiological facts, but that on account of their different natures he has no prospect of ever bridging the gulf between the two." Edinger⁶ writes: "We have no idea how it happens that a part of the work done by the nervous system leads to consciousness." Lloyd Morgan⁷ offers the following practical conclusion: "One of the difficulties is that of conceiving how mind can act on matter, or matter on mind. Let us at once confess our ignorance of the nature

³ Charles F. Advanced Professional Work in Hospitals for the Insane. *Ann. Jour. of Insanity*, vol. 18, 1908. *The Mechanism of Insanity*. *Ibid.*, vols. xlii, xliii, xliiii, 1908-09, also the *Shattuck Lectures on Neurasthenia and its Mental Symptoms* (Boston Medical and Surgical Journal), *Mental Symptoms* (Chicago, Franz N. Y. State Med. Assn., 1903).

⁴ *Ann. Rep.*, 1882, 1889, of *egg*.

⁵ W. G. Carpenter. Presidential Address. *Brit. Med. Psych. Assn. Jour. Ment. Science*, 1882.

⁶ Edinger, L.: *Brain Anatomy and Psychology*. The M. and S. N., 1901.

⁷ *Relation of Mind to Body*. *International Quarterly*, vol. vi, 1902.

of the intimate relation of the one to the other. But certainly in many cases, the observed facts show that, our ignorance notwithstanding, they *are* somehow related. . . . And since we cannot know the nature of the relationship, let us be content to seek for some of its conditions."

The psychiatrist is a physician who should take his point of view in a field even broader than that of general medicine in its largest sense, and not within the narrow limits of any specialism which may seem to include the sphere of mental activities. He has to deal with the physical effects upon the individual of all the influences that act upon him in his environment, and that enter into him from without, or are engendered within, which make for the maintenance or impairment of his vital processes. Such physical influences contributing to conscious experience have their mental effects; the psychiatrist must not only seek to understand the physical changes and effects, but he must deal with the patient's consciousness of them and the more subtle influences that affect the subconscious mental life. The physician must study not alone the influence, upon the mind, of the body in health and disease, but also the external physical, social and moral conditions of the environment unfavorable to mental health and growth. It is in association with this broader view of general medicine that, with respect to mental disorder, he must seek explanation on the physical side of the organism, and turn to expert research for such aid as can be given him by the contributing sciences.

The field of the medical sciences is as wide as that of biology, which comprehends all the interdependent phenomena of mental and physical life; the abnormal must be referred to the normal. The first recourse of the psychiatrist is to physiology whose domain is the study of the forces or functions of living matter. There are no symptoms until there are deviations from normal function; without functional activity disease is impossible.⁸ On the side of normal life, living substance necessarily presents the conditions of structure, form and function; these conditions are primary and disease is not necessary to the existence of living substance. Here the general physician finds himself involved in the contention between the sciences of physiology and pathology; the psychiatrist needs first a normal standard in his knowledge of general physiology, and all that he can learn of mental physiology and its relations to its mechanism, structure and form. Psychology lays open to intimate study the facts of the mental life; on the anatomical side we can know little, and that little explains nothing of the relations between mind and body. It is at this point that the physician must choose his point of view and form his conceptions of fundamental principles. If these are true, they should fit all discovered facts, whether of function or structure, and will lead to advancement of his knowledge; if not true they lead to conflict and

confusion, and obstruct progress. It is necessary to examine the mutual relations of the biological sciences to know their relative value to psychiatry.

THE POSITION OF PATHOLOGY AND ITS INFLUENCE UPON MODERN PSYCHIATRY.

The science of pathology, with the justification of its brilliant achievements, holds itself to be fundamental to the medical sciences. Its elucidation of the phenomena of disease and its results puts it into inseparable relation with life. It claims that its conceptions comprehend all of biology, for on all sides it bears essential relations to the subsidiary biological sciences. Deviations from normal structure and composition of the body, and from the normal functions of its parts, are held to belong to pathology; in this view the study of structural variations in the evolutionary and the developmental processes, from the normal in primordial and embryonal forms, may explain inherited and congenital disease, and, as a part of pathology, throw light upon morphology. Physics and chemistry, as they underlie both function and structure, contribute to the explanation of pathological change, and the disorders of function caused by disease; and pathological physiology and chemistry, whose importance is now receiving growing recognition, are to be regarded as subsidiary to pathology and dependent upon it. In the sphere of general pathology, dealing with function, it finds its duty to be "to correlate symptoms with structural changes and trace the connection between them."

The science of pathology, presenting by its salient aspects such claims to the physician who seeks for light upon the problems of psychiatry, reveals a changing history. The leadership of the pathological-anatomical school in France passing over to Germany culminated in the "cellular pathology" of Virchow, this being founded upon the principle that the cell is the unit of structure and function and that all vital processes are to be referred to the activity of the cells of which the body is composed; they are the "factors of existence." This includes the phenomena of disease and all alterations of the organs and tissues, the principle being that whatever acts upon the cell from without produces a change, either chemical or physical, in the cell structure, and disease is constituted of such changes. These principles became the foundation of the "exact medicine" of the present day. Griesinger first established modern psychiatry upon the exact basis of scientific research and pathological principles, and through Meynert pathological-anatomical teachings were greatly advanced; following them it was in such an environment that the latest schools of psychiatry had their beginnings with an immediate inheritance of its morphological conceptions as the fundamental criteria of scientific truth. Such were the conditions of the inception of the current teachings, based upon a rigid morphology. The German schools of psychiatry became the centers of interest and influence, and their characteristics have already been noted. In the history of the

⁸ Cf. Orth, J.: Relation of Pathology to Other Sciences. *Am. Medicine*, vol. ix, 1905. "Where there is no functional activity and thus no deviation from normal function, there can be no disease." Published while this paper was in manuscript.

time from Virchow, Griesinger and Meynert to the present there have been momentous advances in the other biological sciences as well as in pathology and psychiatry. The two latter lines of research are being strongly influenced by the concurrent changes. There are some very recent and significant signs of changing views in psychiatry which possibly betoken the freeing of itself from the too rigid dominance of structural pathology.

(To be continued.)

Original Articles.

THE SANITARY IMPORTANCE OF CLEAN MILK.*

BY CHARLES HARRINGTON, M.D.

Assistant Professor of Hygiene, Harvard Medical School, and Secretary of the State Board of Health of Massachusetts.

OF the many subjects which of late have engrossed the attention of sanitarians and economists, none surpasses in importance these two: the enormous mortality of infants below the age of one year and the progressively diminishing birth-rates obtaining among the intelligent and well-to-do classes everywhere. Both are established facts, as every vital-statistician will testify. Concerning the various sociologic conditions responsible for the latter alarming condition, I propose to enter upon no discussion. We must recognize that that which has not inaptly been termed "race suicide" is "a condition and not a theory," and we can hardly hope that either academic discussion or public exhortation will be productive of any change for the better, but there is one phase of the subject, which, except from sanitarians, receives far too little attention, and that is the importance of preserving the lives of the diminishing number of those that are born. It is all very well to urge the importance of bringing larger numbers of infants into the world, but what can it avail if, after they are born, they are permitted to die forthwith? How much more does it profit a community to add to its numbers a hundred infants and lose twenty of them through easily preventable causes alone, than to add ninety, one tenth less, and protect them from these same preventable causes of death? The statesman and economist urge the importance of large families; the sanitarian, while agreeing, suggests that we save the infant lives that now are sacrificed. He can but show the way and urge upon the body politic the necessity of its co-operation.

Infantile death-rates are expressed as the annual number of deaths under one year of age to each thousand births. In most countries these rates are appallingly large. For example, in Germany, according to Professor Dembar, of Hamburg, of about 2,000,000 infants born yearly, about 400,000, or one fifth, are lost in their first year—a rate for the whole empire of 200. In the month of October, 1901, no fewer than eight

German cities had an infantile death-rate of more than 333. In Munich, during the period 1871 to 1903, inclusive, the rate was never less than 293; once it reached 419, and the average was 324. In Alsace-Lorraine, the figures are far more creditable; in 1901, 172; in 1902, 179; but even these figures are far too high.

In England and Wales, according to the report of the Registrar-General for 1903, the infantile mortality, during the decennial period 1893-1902, averaged 152 for the whole country, but the rate for cities and towns was about twice that for the rural districts.

The report for 1901 gives it as 146, against 132 in 1903. There was an increase in the 76 great towns, although the climatic conditions of the summer did not favor any prolonged prevalence of the usual main cause of death; and, during the past summer, there was in London, at least, a greatly increased mortality, every hospital for children being filled to its utmost capacity and many cases being turned away.

In England, in the third quarter of a recent year, no fewer than 52,847 infants died, mainly in the great towns, in 33 of which the mortality rate was 275 against 225 for the country at large.

In Birmingham, according to Dr. J. Robertson, M. O. H., more than 3,000 infants under one year of age die annually, against 35 at each yearly period between five and twenty-five years, and while the general death-rate shows a steady decline, the infantile rate shows no improvement.

In our own country, it is possible to obtain but limited information concerning the extent to which infants are permitted to die off, because of the failure of all but nine states and the District of Columbia to provide for registration of the vital statistics. The registration area comprises the New England States, New York, New Jersey, Michigan, and the District of Columbia (Pennsylvania has recently joined). Outside of this area, however, many cities and towns maintain a statistical office of some sort, and their returns are therefore available.

According to the Twelfth Census, the District of Columbia had, in 1900, an infant mortality rate of 271.5. The highest rate obtaining among the nine registration states was that of Rhode Island, 197.9; next came Massachusetts with 177.8; then New Hampshire with 172; New Jersey with 167.4; New York with 159.8; Connecticut with 156.8; and the others with a comparatively small rate showing but not too high.

Among the registration cities and towns of the country, we see Charleston, S. C., with a rate of more than 400; 419.5. There were 8,000 rates exceeding 300. In Maine, 1 in 3,000; 333.3; Fall River, 304.7; 2 in 3,000; 200; Georgia, 1 in 4,000; 250; 1 in 3,000; 333.3. High rates between 250 and 300 were 2 in New Hampshire, 1 in Massachusetts, Lowell, 294, and 17 in the South. No fewer than 47 cities, between 200 and 250, and 4 of these are Massachusetts cities, Salem, 247.7; Lawrence, 246; New Bedford, 222.9; and Holyoke, 204.4. Of the 18 having rates of 175 to 200, 2 belong to

*Read at the Boston Medical Library Meeting, Dec. 20, 1905.

Massachusetts — Boston and Cambridge — and these almost belong in the group preceding, their rates being respectively 194.1 and 186.5. We have, then, in Massachusetts, 8 cities with this discreditable infant mortality rate, ranging from 186.5 to 304.7.

When we ask to what these high rates are due, it must be answered that the causes are many and varied; but there is one cause that stands out most prominently, and that is the substitution of artificial, or bottle, feeding for the natural process of suckling. This is not the time to consider the many other preventable and non-preventable causes of infantile mortality, and I will, therefore, confine myself to this single and most important one.

Wherever the connection between these enormous losses and the method of feeding is investigated, the result of the inquiry is the same, and is condemnatory of artificial feeding. From various reports of British medical officers of health recently submitted, the following figures are taken as indicative of what might be expected in the way of results wherever the subject may be investigated. In one district, of 2,860 infants, 1,960 were suckled and 840 were bottle-fed; and of the former, but 2 died of diarrheal disease, while of the latter, the number was 59. But for the beneficial influence of the natural method of feeding, the 1,960 should have shown, instead of a diarrheal mortality of 2, one of 138, reckoning from the rate obtaining among the 840 that were bottle-fed. Thus, the danger of death from diarrheal disease was 70 times as great among the bottle-fed. In another district, 96 infants died during seven weeks of the summer of 1905, and 75 of them died of diarrheal disease. Nearly every one of these was bottle-fed. In still another, of all the infants that died of diarrheal disease between the ages of six and twelve months, during an entire year, 89% were bottle-fed. And practically all reports in which infantile mortality is discussed mention improper feeding as the one great cause.

An investigation on a large scale was that of the methods followed in feeding the 4,075 infants that died in Munich during the year 1903. This revealed the fact that 3,395, or 83.3% of the number, were bottle-fed.

And now may be asked the question, — What is there about bottle-feeding that makes such a difference? Of minor importance is this fact: that cow's milk is different in character and composition from that of the mother; but of tremendous importance is this other: that ordinary market-milk is, almost everywhere, a polluted, dirty food.

Where does the dirt come from? And just what is meant by the expression "*dirty milk*"? Dirty milk is that which contains large numbers of bacteria due to disease or to lack of care in production, handling and storage at the farm, during transportation and in the home. The matters containing the seeding bacteria get into the milk at various stages, and nature attends to the proper rate of bacterial multiplication.

In the first place, testimony from all over the world, collected during the past few months, indicates that almost everywhere the great majority of cow-stables are kept in such a condition of filth as to be unfit places for the production of milk for human consumption. The premises are dirty; the cows, often diseased, are never cleaned; the milkers are dirty in person and slovenly in their ways; the milking pails and other vessels are not properly cleaned; the milk is not properly cooled, handled and stored, the water supply is quite likely to be of more than doubtful character and exposed to the possibility of contamination with the exciting causes of infective disease.

Under ordinary circumstances, pollution of milk begins before the operation of milking is fairly under way. If the pail is clean before the milker takes his seat, it does not long remain so, for almost at once, dirty hairs and particles of dry cow-dung become dislodged from the animal and drop into it; and they continue to fall during the entire process. A gram of cow-dung is not a very large amount so far as volume and weight go, but Warrington has calculated that, coming from a hay-fed cow, it will contain about 165,000,000 bacteria; and, therefore, a small fraction of a gram in a pail of milk will contribute a very respectable number of millions of bacteria as a starter. Under favoring conditions of temperature, no further additions would be required to make the milk a good vehicle for cholera infantum. But it does not get off so easily; there are many other possibilities between the cow and the consumer, and others in the home of the latter.

The householder in the city takes everything on faith. He knows nothing of the conditions at the farm or whether the cows are diseased; he knows nothing of the conditions obtaining during transportation; he does not see the disgusting tasting process to which the peddler subjects each can before its final acceptance — the lapping of stoppers, the dipping out with a spoon which passes from can to mouth and back to the next can, while the taster spits about him on all sides that which he has tasted; sometimes the hand itself is dipped into can after can and lapped by the expert in tasting.

The consumer does not see the process of dumping the milk into large receptacles, visited by swarms of dirty flies that have but just before been paying visits to all manner of vile refuse in the vicinity. If they fall in instead of merely tracking dirt in on their feet, so much larger a contribution do they make to the flora of the milk.

The consumer does not see the horse-stable in which the milk is put up for family trade and stored until the following morning, when it will be delivered so early as to satisfy the demand for milk right from the farm. If he buys it in a shop, he knows nothing of the manner in which it is stored and handled by the additional middleman.

All the customer knows, as a rule, is this: that

the milk is delivered at his house in nice glass bottles early in the morning. And he lets it go at that.

Concerning the exciting causes of the various diarrheal diseases common to bottle-fed infants, we have reason to believe that they are numerous. Among them is Klein's *B. enteritidis sporogenes*, which is not yielded by cow-dung, but is found in horse-dung, and is believed by many English authorities to play a great part in the pollution of milk in the home, being blown about in the air of cities and gaining access to milk exposed, as it often is, to the air. I can imagine I hear somebody saying, "That's a small danger. Our milk comes in bottles and goes right into the ice chest." But it is not a small danger; pollution of milk with horse manure is more than a possibility; it is more than probable; for, strange as it may seem, horse manure is very commonly used as a bedding material for cows, and right here in Massachusetts too. Thus, in many cases, the milk may receive from the body of the cow particles of two kinds of dung at the same time.

Another cause of cholera infantum lies in the streptococci and other organisms contained in the pus contributed to the milk of cows suffering with garget, which is the most common of cattle diseases. But this is by no means the only disturbance which is caused in the consumer of pus as a beverage, for numerous extensive outbreaks of septic sore throat in persons of all ages have been traced directly to gargety cows. Concerning other bacteria which cause these various forms of milk poisoning, no discussion is at present necessary.

From what has been said, it must not be inferred that dirty milk is a menace to the health of infants under one year of age alone. It is among those of that age that the death-rate is most appalling, but among children of all ages up to five years the number of deaths due to the same cause is inexcusable and criminal. Nor must it be inferred that those that escape death are wholly free from the deleterious effects of filth, for the child that recovers from cholera infantum may suffer permanent injury to its constitution in spite of recovery. And it is not alone in behalf of infants and children that the sanitarian pleads for a clean milk supply; the invalid and convalescent are also to be considered, and the strong and well besides. Dirty milk is responsible for more outbreaks of typhoid fever than is polluted water in a state, which, like Massachusetts, guards its water-sheds from infection. In this Commonwealth, within the past year, nearly every one of the outbreaks of that disease of sufficient magnitude to cause public concern have been traced to insanitary dairies, where pre-existing cases had occurred, the patients being cared for, perhaps, by those who handled the milk, or themselves doing the milking and handling before taking to their beds or after apparent recovery.

I have not thus far referred to the danger which recent governmental commissions have agreed attends the use of milk from tuberculous cows

In view of all the evidence adduced, it is clear that tuberculosis, especially of the digestive tract, can be, and is, transmitted by such milk, especially if the disease in the cow has become localized in the udder. And such milk, with its pus and bacilli, is certainly to be classed as dirty.

Against the production and sale of diseased and ordinarily dirty milk it appears to be difficult to arouse intelligent public interest. The death of a few children from diphtheria or scarlet fever causes grave apprehension in a public that views with apparent equanimity wholesale murder through a polluted milk supply and will not lift its hand nor loosen its pocket to encourage those whose clean product must compete in the market with that of the slovenly. Clean milk costs more to the producer than dirty milk, for it means increased care and greater outlay for help; but, as an intelligent milkman wrote me recently, the public seems to prefer milk, plus cow-dung at eight cents per quart, to clean milk, not so flavored, at nine cents.

It is a crime to add substances commonly classed as poisons to milk or other food, even though the amount added be incapable of causing any apparent disturbance of health, but it appears to be quite legitimate to add the generators of the far more potent bacterial poisons in manure and other filth.

It is not generally known, except among the farmers, that the Massachusetts State Board of Health has, during the past year, been conducting, through a skilled veterinarian, a systematic inspection of dairies, and bringing about much needed improvement in conditions. The movement has occasioned some opposition from those whose horizons are somewhat limited, and has evoked some sympathy for the farmer from many of those whose conservatism is averse to altering any existing condition. In a certain locality, which had been visited, the feeling against official supervision was so strong that the local health board, which was contemplating co-operation, requested me to make a public address on the subject in the town hall. In the interval between the acceptance of the invitation and the date fixed for the address, an outbreak of some forty odd cases of typhoid fever occurred and an appeal for an investigation of its cause was made. It was demonstrated at once that the outbreak was due to milk polluted at its source, and the address was listened to by an audience that had become converted from sullen opposition to enthusiastic appreciation of the efforts of the board. That and several other communities have now become converted, and it is hoped that this change of sentiment will spread to all parts of the Commonwealth.

What is the cure for dirty milk? Some say that, if we sterilize or pasteurize, all will be well. But why injure the biologic properties of milk by heating? Why permit the pollution of milk by excrement, then kill the bacteria by heat and swallow the mixture? Why not prevent rather than cure? Why drink fecal matter and pus, even though it be sterilized?

The remedy is simple. We should insist upon clean milk and be willing to pay for it; encourage the production of a sanitary supply and refuse to buy excrement and pus; buy of the man whose supply costs a cent or two more per quart to produce, and let the sloven learn that cleanliness is an asset and filth a heavy load to carry.

THE RESULTS OF OPERATION FOR THE REMOVAL OF CEREBRAL TUMORS.*

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MORE than a word of apology seems necessary for presenting for the fourth time so arid a subject as the statistics of operations for the removal of tumors of the brain, especially when the present statistics are far from complete and lead to no more hopeful conclusions than those I have formerly expressed.¹ When I presented, six years ago, a fairly complete collection of operative cases, 561 in number, it seemed probable that the number of recorded cases would soon become so great as to render it hardly worth while to undertake another complete collection, nor since then has any one done more than to collect the complete statistics of operations in a certain region, such as the cerebellum.²

I have been asked, however, to present as an appendix to the paper of Doctors Walton and Paul³ the statistics of a recent collection of 267 cases which have been published since my last article, and which I made last winter for another purpose. I may state that I made no attempt, on this occasion, to make any exhaustive collection of the cases reported since 1899, but I simply took the cases readily accessible in abstract in the *Jahresbericht der Neurologie*, the *Neurologisches Centralblatt*, the *Revue Neurologique*, and such other cases as fell in my way without special research.

In 1899⁴ I collected 24 cases of operation on tumors of the brain. In 1891⁵ I added 48 cases to these, making 72 cases, and in 1899 I collected 489 cases more. It has seemed to me that it might be of some advantage to compare these three groups with the present collection to see what progress we have made in the surgical treatment of brain tumor, as well as to present the general results drawn from the whole collection of 828 cases, 14 of which have not as yet been published. The accompanying tables (Table I and Table II) will show the results of these operations as reported in 1899, the results in the 267 cases collected since, and the total results in

the 828 cases. The subsequent tables (Tables III, IV, V and VI) show the mortality, the number of cases not benefited by operation, and the number of cases in which there was a failure to remove the tumor in each of the four groups of cases, — those collected in 1889, in 1891, in 1899 and 1905, — together with the total results in the 828 cases. The cases classed as not benefited are those in the two columns of the previous tables headed "Not improved" and "Died." The percentages are given, but it must be remembered that they are somewhat fallacious. A single case in 1889, when only twenty-four cases were recorded, of course counted for about 4%, but in 1899 a single case counted for about one fifth of 1%.

These tables show that with the later cases there has been a diminished mortality as a result of the operation, and a somewhat greater number of cases benefited. Much of this gain I believe to be due to the improved surgical technique, which I think is obvious to every one who has followed attentively the methods of operating upon the brain since the earlier operations in the eighties. This is still more striking if we compare the mortality from operations on tumors of the central convolutions in Table II, in the collection of 1899 and of 1905, where the mortality percentages are 27 and 4½ respectively. Since 1899 there seems to have been a relatively greater increase in operations on other parts of the cerebrum, and in these the operation seems more fatal than the operation on tumors of the central convolutions. It is not improbable, however, that this diminution in mortality is more apparent than real. There is certainly a lessened tendency to report cases where the tumor was not found or could not be removed, and also where a tumor was removed with fatal results, so that there is probably an undue prominence of successful cases among those reported.

The table showing the percentage of failures to remove the growth is less flattering to the neurologist than the previous tables to the surgeon. In spite of the roseate hopes that are so often expressed, the failures in diagnosis are still great, and the slight diminution shown in the figures for the last six years may perhaps be explained merely by the failure to report the unsuccessful cases, rather than by any advance in the accuracy of our diagnoses.

In spite of the number of cases said to have "recovered," a study of the recorded cases confirms me in the belief that most of these simply linger on for a time, paralytic, epileptic or blind, and that in many instances the growth reurs. The cases of actual recovery, that is, of complete restoration to health, are exceedingly few. We cannot excise a portion of the cerebrum without a permanent impairment of function to a greater or less degree, according to the location and extent of our interference. Moreover, the growth itself gives rise to various changes, either changes in the cells throughout the brain, with disappearance of the tangential fibres (Giannelli⁶), or such

* Read at the thirty-first annual meeting of the American Neurological Association at Philadelphia, June 2, 1905.

¹ Boston Medical and Surgical Journal, April 5, 12, 19, 1899.

² Starr's Collection, Journal of Nervous and Mental Disease, July, 1903, embraces only 365 cases. Frazier has collected 116 cerebellar cases, N. Y. Med. Jour., Feb. 11, 18, 1905. I have not made use of his statistics because, as my own collection is incomplete, I felt that it would make the cerebellar cases unduly prominent.

³ Journal of Nervous and Mental Disease, August, 1905.

⁴ Boston Medical and Surgical Journal, April, 1899.

⁵ The Pathology, Diagnosis and Treatment of Intracranial Growths, 1891.

⁶ Il Policlinico, iv, 301, 1897.

changes as softening, hemorrhage, encephalitis and the like (Sagui?), in the immediate vicinity of the growth. It is, of course, justifiable to operate in suitable cases with the probability of affording temporary relief, but the possibility of a complete cure is slight, and the optimistic views, or rather hopes, so often expressed as to the benefits of operation are hardly justifiable.

A word may be said as to the so-called palliative operation for the relief of pressure, which it is claimed will relieve headache and arrest the progress of optic neuritis. This is true for only about one half of the cases. In many cases the headache has persisted and the neuritis has gone on until the patient became blind, even after a good-sized hole had been made in the skull. Here is a section of the brain from a patient who had, when I first saw him, Jacksonian epilepsy, slight paresis, occasional slight headache and no optic neuritis. Nine months later he was trephined, a hole about 4 cm. in diameter being made in the skull. The growth, an endothelioma growing from the dura, was not removed on account of hemorrhage. A year later he had much severe headache. He had become blind and hemiplegic, and marked mental symptoms, hallucinations, delusions and violent actions, had developed. The toxic factor in the production of neuritis has long been recognized, and it is believed by many to be of importance in the production of headache, mental disturbances and other symptoms. Relief of pressure will, therefore, have little influence upon any symptoms of toxic origin.

As an appendix I would add that from a study of 104 autopsies of tumor of the brain, it has seemed to me that 4 were anatomically accessible and presented enough clinical symptoms to be successfully localized so as to come under the heading of cases definitely operable, as described by Drs. Walton and Paul. Brunniche⁴ has

recorded 6 cases out of 209 as definitely operable. The figures which I have given in previous studies were intentionally as liberal as could be made, and included all the "possibly operable" cases as well.

In the previous tables I included a number of cases which have come under my own observation or have been operated on at the Boston City Hospital, 17 in all, most of which have not been published.

| TABLE I. | | | | | | |
|------------------|-----------------|----------------|--------------------|-------|----------------|--------|
| 1899. | Re- covered. | Im- proved. | Not im- proved. | Died. | Not stated. | Total. |
| Removed . . . | 76 | 72 | 59 | 86 | 18 | 311 |
| Not found . . . | 4 | 14 | 46 | 61 | 5 | 130 |
| Impossible . . . | 0 | 6 | 8 | 20 | 2 | 45 |
| Palliative . . . | 0 | 37 | 22 | 12 | 4 | 75 |
| Total . . . | 80 | 129 | 135 | 188 | 29 | 561 |
| 1905. | | | | | | |
| Removed . . . | 36 | 50 | 19 | 37 | 18 | 160 |
| Not found . . . | 0 | 10 | 15 | 26 | 8 | 59 |
| Impossible . . . | 0 | 5 | 3 | 11 | 0 | 19 |
| Palliative . . . | 0 | 11 | 14 | 3 | 1 | 29 |
| Total . . . | 36 | 76 | 51 | 77 | 27 | 267 |
| TOTAL. | | | | | | |
| Removed . . . | 112 | 122 | 78 | 123 | 36 | 471 |
| Not found . . . | 4 | 24 | 61 | 87 | 13 | 189 |
| Impossible . . . | 0 | 11 | 11 | 40 | 2 | 64 |
| Palliative . . . | 0 | 48 | 36 | 15 | 5 | 104 |
| Total . . . | 116 | 205 | 186 | 265 | 56 | 828 |

| TABLE II. | | | | | | |
|------------------|-----------------|----------------|--------------------|-------|----------------|--------|
| 1899. | Re- covered. | Im- proved. | Not im- proved. | Died. | Not stated. | Total. |
| Frontal . . . | 5 | 2 | 0 | 2 | 0 | 9 |
| Central . . . | 41 | 57 | 38 | 52 | 2 | 192 |
| Parietal . . . | 2 | 3 | 3 | 2 | 0 | 10 |
| Temporal . . . | 0 | 0 | 3 | 4 | 1 | 8 |
| Occipital . . . | 1 | 1 | 1 | 2 | 1 | 6 |
| Cerebellum . . . | 1 | 6 | 3 | 8 | 0 | 18 |
| Not stated . . . | 3 | 11 | 16 | 14 | 0 | 48 |
| Total . . . | 76 | 72 | 59 | 86 | 18 | 311 |
| 1905. | | | | | | |
| Frontal . . . | 10 | 1 | 3 | 6 | 2 | 22 |
| Central . . . | 9 | 25 | 5 | 2 | 3 | 44 |
| Parietal . . . | 5 | 2 | 2 | 10 | 0 | 19 |
| Temporal . . . | 2 | 1 | 3 | 1 | 0 | 10 |
| Occipital . . . | 2 | 2 | 1 | 0 | 0 | 5 |
| Cerebellum . . . | 6 | 10 | 5 | 15 | 1 | 37 |
| Not stated . . . | 2 | 3 | 0 | 3 | 12 | 20 |
| Total . . . | 36 | 50 | 19 | 37 | 18 | 160 |
| TOTAL. | | | | | | |
| Frontal . . . | 15 | 6 | 3 | 8 | 2 | 34 |
| Central . . . | 50 | 82 | 43 | 54 | 5 | 236 |
| Parietal . . . | 7 | 5 | 5 | 12 | 0 | 29 |
| Temporal . . . | 2 | 1 | 6 | 5 | 1 | 18 |
| Occipital . . . | 3 | 3 | 2 | 2 | 1 | 11 |
| Cerebellum . . . | 7 | 16 | 8 | 24 | 1 | 56 |
| Not stated . . . | 6 | 6 | 11 | 19 | 26 | 88 |
| Total . . . | 112 | 122 | 78 | 123 | 36 | 471 |

TABLE III — PERCENTAGES OF OPERATIVE MORTALITY

| | 1899. | | | 1901. | | | 1909. | | | 1905. | | | TOTAL. | | |
|-------------------|--------|---------|-----------|--------|---------|-----------|--------|---------|-----------|--------|---------|-----------|--------|---------|-----------|
| | Cases. | Deaths. | Per Cent. | Cases. | Deaths. | Per Cent. | Cases. | Deaths. | Per Cent. | Cases. | Deaths. | Per Cent. | Cases. | Deaths. | Per Cent. |
| Removed . . . | 18 | 7 | 39 | 28 | 8 | 29 | 265 | 71 | 27 | 160 | 37 | 23 | 471 | 173 | 36 |
| Not removed . . . | 6 | 4 | 67 | 20 | 12 | 60 | 224 | 86 | 38 | 107 | 37 | 35 | 357 | 142 | 40 |
| Total . . . | 24 | 11 | 46 | 48 | 20 | 42 | 489 | 157 | 32 | 267 | 74 | 29 | 828 | 265 | 32 |

TABLE IV — PERCENTAGES OF FAILURE TO BENEFIT

| | 1899. | | | 1901. | | | 1909. | | | 1905. | | | TOTAL. | | |
|-------------------|--------|----------------|-----------|--------|----------------|-----------|--------|----------------|-----------|--------|----------------|-----------|--------|----------------|-----------|
| | Cases. | Not benefited. | Per Cent. | Cases. | Not benefited. | Per Cent. | Cases. | Not benefited. | Per Cent. | Cases. | Not benefited. | Per Cent. | Cases. | Not benefited. | Per Cent. |
| Removed . . . | 18 | 9 | 50 | 28 | 12 | 43 | 265 | 125 | 47 | 160 | 56 | 35 | 471 | 202 | 43 |
| Not removed . . . | 6 | 5 | 83 | 20 | 14 | 70 | 224 | 158 | 70 | 107 | 72 | 67 | 357 | 249 | 70 |
| Total . . . | 24 | 14 | 58 | 48 | 26 | 54 | 489 | 283 | 58 | 267 | 127 | 47 | 828 | 451 | 54 |

¹ Sagui: De quelques lésions secondaires aux tumeurs cérébrales. Thèse de Paris, 1899.

⁴ Brunniche: Studier over Hjernesvulsternes Behandling. Copenhagen, 1903.

TABLE V.—PERCENTAGES OF FAILURE TO FIND THE GROWTH.

| | 1889. | 1891. | 1899. | 1905. | Total. |
|------------------------|-------|-------|-------|-------|--------|
| Removed | 18 | 28 | 265 | 160 | 471 |
| Not removed | 10 | 115 | 59 | 189 | |
| Per cent failure | 2 | 26 | 30 | 27 | 29 |

This table reckons only the cases where there was a definite failure to find the growth at the seat of operation. Many of the so-called palliative operations may fairly be regarded as failures in diagnosis, and the cases where it was impossible to remove the growth when found also point to the limitations of the operation. Including all these, failures to remove the percentages differ, but show the same general trend, that there has been little if any real gain in the percentage of tumors actually found and removed.

TABLE VI.—PERCENTAGES OF FAILURE TO REMOVE.

| | 1889. | 1891. | 1899. | 1905. | Total. |
|------------------------|-------|-------|-------|-------|--------|
| Removed | 18 | 28 | 265 | 160 | 471 |
| Not removed | 25 | 40 | 224 | 107 | 357 |
| Per cent failure | 25 | 41 | 46 | 40 | 43 |

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A REPORT OF TWO CASES OF ERYTHEMA MULTIFORME DESQUAMATIVUM, ONE OF THEM COMPLICATED BY A PURPURIC ERUPTION, WITH A DISCUSSION OF THE UNDERLYING CONSTITUTIONAL CONDITIONS.

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CONSIDERABLE interest has been given by the numerous papers of Osler on the subject, to the conditions which underlie many of the obscure forms of erythema. Not enough cases have been collected to enable one to get much of importance out of a study of these underlying conditions, or of the symptoms common to a majority of the cases. Indeed, in the comparatively large number reported by Osler in five different papers, a summary of the conditions in which some form of erythema was a complication gives one chiefly the idea of how widespread and obscure the etiological factors may be which cause this trouble.

A review of Osler's 29 cases gives some very important information as to the etiology, course

and severity of the trouble, its many-sided manifestations and complications. Eighteen of his cases were males. The youngest was three years of age, 17 were fifteen or under. The oldest was fifty-seven. Twenty-two had purpuric skin lesions; 17 urticaria; 5 circumscribed edema; 14 the usual form of erythema; 25 had colic; 17 arthritis or arthritic pains; 15 vomiting; 15 hemorrhages from the mucous membranes; 15 albumin; 14 nephritis as a cause for the albumin; 14 fever; 5 diarrhea; 7 enlarged spleen, 2 had endocarditis; 1 doubtful endocarditis; 5 died of uremia as a result of the nephritis. The other deaths were due in one case to pericarditis and one to pneumonia during the third attack.

The other unusual complications were otitis media in 3 cases; bronchitis in 2; spasmodic croup from edema in 1; aphasia and hemiplegia in 1, and pneumonia, not fatal, in 2. It was impossible to measure the duration of the trouble in many of the cases, but it had occurred an almost countless number of times over a period of twenty-seven years in one patient of fifty-seven who finally died from hemorrhages in an attack. The shortest duration, in a female child of four, was three weeks. This case had purpura, urticaria and edema, fever with gastro-intestinal crises, albumin without nephritis, and arthritic pains.

Osler himself does not attempt any classification of the conditions which may bring about erythematous manifestations, nor does he associate any particular form of erythema with certain types of the underlying trouble. The commonness with which purpura, including *peliosis rheumatica*, circumscribed edema and urticaria, occurred in his cases, led him to question whether there was not a close affinity among these skin manifestations. He calls special attention to the substitution of these affections for each other in the same patient at different times.

I quote a statement made in one of his papers, because it seems to me that simplicity in classification is demanded in these obscure conditions, and because it has been my experience that these varying manifestations occur interchangeably as the result of the same systemic conditions. The special statement of Osler reads as follows:

"Henoch's purpura, characterized especially by gastro-intestinal crises, and Schönlein's *peliosis rheumatica* may be regarded as hemorrhagic types of exudative erythema."

Bearing out this same point, Thibierge, in his *Traité de Médecine*, vol. III, groups both purpuras and urticarias under erythemas. He describes three types of purpura, namely, rheumatic, infectious and the purpura hemorrhagica of Werlhof. Galloway described a case of profuse exudative erythema with purpuric lesions and enterocolitis, and refers to "the purpuric type of the exudative lesions of the skin." Laver reports a case of arthritis, edema and erythema exudativa purpurica with final sloughing of the affected areas.

Carter reports a case of hemorrhagic exudative erythema in which he describes the purpuric

eruption as identical with Henoch's purpura. The French school generally regard purpura as an erythematous manifestation, and particularly Brocq and Besnier, who have added much to French literature on the varying manifestations of this disorder. Dermatologists take exception to this classification, but it seems reasonable, and purpura occurs so commonly with other erythematous manifestations in rheumatic and certain grave infections, that I think it important to maintain the connection.

The two cases of scarlatiniform or desquamative erythema which are recorded here are interesting in connection with several points in Osler's reports:

1. One had gastro-intestinal crises, fever, joint, heart and kidney complications; the other had intestinal disturbance, fever, slight kidney disturbance, angio-neurotic edema, and purpura with hemorrhages from the mucous membranes.

2. None of Osler's cases had the scarlatiniform variety of erythema which seems usually not to be associated with as severe conditions as in these two cases.

3. Digestive manifestations preceded all the attacks in one case and preceded the single attack in the other.

The histories of the two cases are as follows:

CASE I. W. P., male, age six and one-half years. History of repeated attacks of endocarditis for the past two years, associated with sore throat and tonsillar disturbance. In one such attack, lasting three or four days, had one or two convulsions with temperature of 101°. History of irregular heart action in the father with some rheumatism. Mother has had growing pains. Has early sclerotic changes in the arteries. Maternal grandmother died of cerebral hemorrhage at fifty-six.

For six weeks following an attack of tonsillitis, patient had a daily temperature ranging from 1 to 2.5 above normal. It is extremely irregular, being often up in the morning and normal at night. Complained of headache on exertion during this time, looked pale and had disturbed appetite.

Heart action during most of this four years has been irregular in rhythm, and a systolic murmur, loudest at apex, has been constantly present.

For months at a time there has been a temperature range of 1° to 2° daily, with nothing but the heart condition to account for it.

Jan. 1, 1905. Patient seen Dec. 31, 1904, having had ten days of epigastric pain, cramp-like in character. A temperature this morning aroused the family. At 10 a.m., I found a diffuse, tiny, regular eruption all over the trunk, shoulders and thighs, which had not appeared on the face, neck, arms or legs. It was perfectly discrete. It had no crescentic appearance and consisted of tiny reddened areas, slightly raised in the center, each one about the size of a pin head. There was no pain anywhere. There had been slight throat symptoms forty-eight hours before, but there was no eruption on the cheeks or throat. No corvæ nor eye symptoms. The glands were slightly large everywhere. There was no evidence of any skin infection. The heart was more irregular than usual and the murmur louder.

Temperature was 99.5 the following day, and the eruption had covered the entire body and the face except about the mouth. Where the itching had

caused him to scratch it a good deal, it was diffusely red between the patches, looking more like scarlet fever. There was a shotty feel to the eruption on the trunk and extremities. The palms and soles were also affected.

Temperature that afternoon rose to 102°, but on the two or three days following, it was not higher than 101°, and at 3.30 Jan. 6, was only 1° up.

Jan. 6. Patient's temperature last evening was still up to 100°. Examination of the urine shows a little albumin and a few casts, possibly more than could be expected from the febrile condition. Examination this morning shows the rash still lingering all over the body, although the face is quite clear, except on the neck. There are marks of his having scratched it very thoroughly in various places. The glands are easily felt all over the body, particularly the epitrochlear and postcervical glands.

Jan. 10. Patient has had rheumatic pains and swelling in the ankle joints of both feet for three days. The right ankle is still puffy this morning. Temperature ranges about 100°. He is peeling very markedly all over the scalp, and less markedly over the entire body, the peeling being scarcely perceptible as yet on the legs and the palmar surfaces of hands and feet. The peeling began Jan. 8, very lightly.

May 6. Boy's desquamation was complete six weeks after the attack was over. His nails desquamated but did not come off entirely.

The diagnosis of German measles was held for a day and scarlet fever was considered on account of the throat, but no report of the case was made to the health authorities. After the fourth day, desquamative erythema was diagnosed and some days later Dr. F. S. Burrows concurred in this. The throat condition was not more than a slight redness, with soreness on swallowing.

CASE II. M. C., male, age six and one-half years. Seen Jan. 8, 1904, 8 A.M., with Dr. K. Van Orden who gave the following history: Maternal grandmother had rheumatic joints. Paternal grandfather, now seventy-one, had rheumatic joints (ankles), one bad attack following overheating.

On the 7th of December, 1903, the patient was seen by Dr. Van Orden with a rheumatic attack. Temperature 101°. For several days had had pains in the back, arms and down the thighs. Felt cold and tired. On the 17th seen again with a temperature of 101° to 102°. Rash on the third day on the trunk; diagnosed German measles, mild attack. No cough, no sore throat. Seen only four days. On the 27th of December, day following a drive, had chilly sensation and temperature. Chilliness had been felt off and on for some weeks back. On the 28th a rash again appeared, brighter than before but of same character, spreading farther down the legs to toes. Very little on neck, none on face. Had been taking anisated ammonia, etc., little calomel, no quinine. The temperature reached 103° one day. Rash faded by the 30th. On the 31st rash gone and temperature normal. No desquamation. Not seen until Jan. 4. Had been up a day or two on limited diet. On evening of the 4th was downstairs. Felt badly all day. On the 5th complained of feeling cold, eyes heavy. On the 6th had fever of 104, flushed face, no vomiting, no sore throat. Was developing six-year old molars. On the 7th was more flushed on face, but not on body; hands and forearms to elbows and legs from toes to knees showed a papular vesicular eruption. Temperature 101-104.2°. Pulse 120 to 130. This eruption was noted in morning and didn't spread. On the 8th the face was edematous and there was a flush all over the body. Prepuce edematous. Complained of throat and eyes. Some ecchymoses on right shoulder. Tonsils said to be large. No

cough. Said to have passed some mucus with the stools yesterday. The urine was diminished this morning, but 26 oz. had been passed during the afternoon and early evening.

Examination: The child at 8 A.M., had a temperature of 101.5°. He was very bright. The face was considerably swollen and the eyes about half closed. There was no eruption on the face at all, but marked pallor. The papillae on the tongue were prominent and the tongue itself coated. The tonsils slightly large and red, with no membrane. There was no tenderness behind the ears, but the glands in the neck were slightly enlarged. The axillary and inguinal glands were tender and markedly enlarged, some of them being as large as very large beans. There was some swelling of the tissue under the angle of the right side of the jaw. There were some mottled red blotches, one nearly 1 cm. broad, on both ears. Over the chest and particularly over the back there was a slightly mottled but diffuse blush. It was particularly marked over the neck and buttocks, around the genital organs and slightly down the inner side of the thighs. Toward the extremities it became much more mottled, certain of the blotches being quite discrete. On the dependent parts the pressure of the clothes in folds had caused linear ecchymoses, looking very much like long scratches, particularly marked over the buttocks and shoulders. There was a marked absence of eruption or blush in the axillary spaces. The whole thing is said to have faded very much to-day. There is a slight puffiness over both ankles and the mother thinks over the instep. The conjunctivae of both lids are slightly reddened. No discharge from the nose. Spleen slightly enlarged. No abdominal tenderness. The heart sounds are not quite clear, the first sound being replaced by what is apparently a functional murmur, transmitted well to the neck. The breathing is slightly harsh over most of the left lung, but this is not noted with expiration.

Jan. 19, 9 A.M. Following the last note the eruption spread over the legs and became scarlatiniform in character. There still continued some swelling in the neck and the enlargement of the axillary and inguinal glands continued about the same. On the 14th multiple subcutaneous hemorrhages appeared on the chest and tongue. These grew worse through Saturday the 16th. That night the temperature was 101° and the patient had a nose bleed from one nostril which lasted nearly all night. The subcutaneous hemorrhages were none of them large. Most of them pin head in size. The largest the size of a split pea. The skin had been dry and had cracked and itched extremely, and he had scratched it quite vigorously for some days before the hemorrhages appeared. The urine continued clear and the heart action favorable through Saturday night. With the rise in temperature there was an increase in the heart activity and the boy complained of feeling cold in his back. The face became more and more swollen and the hands also quite edematous. The skin cracked at the angle of the eyes and at the mouth. On the 17th, the temperature reached 103°. On the 18th a pericardial rub was heard toward the base of the heart which had not been there the evening before. The skin has been irregularly desquamating for five or six days over the entire body. There have been no throat, ear or gastro-intestinal symptoms. There may be a slight amount of constipation, but the patient is largely on a milk diet. The hemorrhage from the nose was so profuse that a large quantity of clots were expectorated and the patient became excessively anemic.

Examination: Very faint pericardial friction is heard and a blowing systolic murmur. The heart

action is 120. The murmur undoubtedly hemic. Heavy black scabs all over the angles of the eyes and the mouth. Skin peeling everywhere. Skin very dry and pretty well covered with very faint tiny purplish spots which are not nearly faded out. The largest one is on the lower lip. There are a few millet seed in size over the point and under surfaces of the tongue. The spleen is not enlarged nor tender. The glands are everywhere enlarged to about the same size as noted before. The hands and feet are pale and slightly edematous. The edema in the face and neck are said to have disappeared practically in the last twenty-four hours. The scrotum and foreskin are not edematous. There is no tenderness anywhere except over the enlarged glands. No pains in the bones. Child's temperature this morning is normal.

The blood cultures taken Jan. 19 were negative. The blood examination showed 28% hemoglobin, 1,700,000 red cells, 6,800 whites. Differential, 41.5% polymorphs, 17.5% large lymphocytes, 36% small lymphocytes, 4.5% eosinophils, 5% myelocytes. The urine contained a faint trace of albumin with a few hyaline casts and a few leucocytes and red blood cells.

Jan. 20. The child has had an increased temperature of only about 1° by axilla for two days. The pulse runs 120 to 130. Skin is desquamating irregularly all over, more markedly on the backs of the hands. The fresh skin on the chest is slightly reddened and shiny, particularly on the lower border of the ribs. The papillae of the tongue are much enlarged, pale, glistening and with a pedunculated beaded appearance. The ends of the fingers are pale and brawny. Large purplish area of subcutaneous hemorrhage in the palms of both hands, particularly the left, nearly the size of a dollar. The purpuric eruption has almost faded and there are no fresh hemorrhages anywhere. The back of the left hand is more edematous than yesterday. The edema elsewhere is about the same. There is still a slight pericardial friction sound, but the hemic murmur is less marked than yesterday. The child is markedly constipated. Has no pains anywhere. Appetite is normal. Child has had Crede ointment on lower limbs for the last twenty-four hours, and is getting calcium chloride in 4-dram doses by rectum every six hours. Iron and arsenic internally.

Temperature remained normal. There was some little trouble in having the bowels moved satisfactorily; except for this no complication whatever occurred during his rapid convalescence. At this time he has about finished desquamating and his general condition has improved very rapidly. The heart trouble subsided at once although the heart is above 100 most of the time and when it is a little more rapid there is 1° of temperature.

Nov. 21, 1904. Father reports that the boy had a similar attack to the last one, only not nearly as severe, a few weeks ago. He was up in the country at the time. Had fever, a general eruption and later the skin peeled.

May 6, 1905. On examination yesterday, has three distinct ridges on the nails marked by a roughness and depression. He has had three attacks since the one that I saw him in. The first one last November a duplicate of the severe attack except for the hemorrhages and purpura. These attacks seem to have been preceded by an intestinal disturbance. For that reason he was kept six months on a diet of milk. In spite of the diet has had two more lighter attacks.

In August, 1905, he had a slight attack with temperature for two days preceded by a bad breath, but no distinct stomach attack. Eruption showed especially on hands and face both of which peeled.

There can be no doubt in the second case that all of the attacks were due to the same condition and were more or less severe manifestations of the same trouble. An interesting factor in both cases was the involvement of the heart. In two of Osler's cases were there endocardial complications and a third one died of pericarditis. In one of my cases there was a history of recurrent endocarditis with an involvement of the endocardium in the present attack, and in the other there was a pericarditis. Both boys, who were nearly the same age, had pain in the abdominal region. Both had also vague rheumatic histories. One had a history of pain in the back, arms and down the thighs, with temperature, a month before the attack. The other had had several attacks of tonsillitis and pains described as growing pains for several years. There was also a distinct rheumatic history in both parents of this child.

Erythematous, as manifestations of serious constitutional conditions, have been reported sporadically for many years. In general the underlying conditions may be classed as (a) serious disturbance of nutrition, (b) certain contagious diseases, (c) protozoan infections, (d) evidences of visceral disorders producing toxins as a result either of improper food or imperfect digestion and metabolism, (e) Bright's disease, (f) rheumatism.

As types of the nutritional causes, Galloway reports erythema induratum with focal necrosis and acute gangrene of half the trunk preceding death. Patient had grown suddenly very stout in the midst of the disorder. Mackenzie, in a discussion of erythemas, recalls a case of a youth unusually fat, with congestion of the cutaneous circulation. After several years of suffering with simple erythema, he developed exfoliative dermatitis, became emaciated and died.

Under the bacterial and protozoan causes are most of the severe contagious and infectious diseases,—typhoid, cholera, cerebrospinal meningitis, diphtheria, etc. Vaccination itself has been followed by various manifestations of erythema. Malaria has occasionally been accompanied by herpes, urticaria, petechial eruptions and even multiple gangrene. No characteristic form of the erythema has been constantly associated with severe malarial infections. Manson and Daniels report that trypanosoma infection causes erythema.

Most authors agree that erythematous manifestations occur most often in gastro-intestinal intoxications, from poisons introduced into the stomach, or from errors in metabolism. A great variety of types of erythema are reported under this heading, and the literature on the subject increases the list of substances classed under poisons all the time. Quite recently the various antitoxins have been added to the already long list. Diphtheria antitoxin was added to the list from the date of its first use.

The cases with eruptions and gastro-intestinal crises are, as a rule, the least serious form of the trouble, unless other complications supervene, as they are likely to in case the attacks recur.

Among the conditions underlying erythema and impossible of classification or belonging to the rheumatic class, Thornton has recently reported glandular fever associated with erythema nodosum.

McColluck reports a case of erythema nodosum and erythema multiforme coexisting in a boy of fifteen, subject to frequent attacks of tonsillitis, and in whom both types of erythema appeared at the same time. The process lasted about three weeks, the acute stage eight days. The family history was distinctly interesting. The mother had had erythema nodosum before marriage. Maternal grandmother had had rheumatic fever; an elder sister died at sixteen with endocarditis and multiple joint affections. A younger sister had had rheumatic fever with endocarditis, another sister repeated attacks of tonsillitis, and a maternal uncle and three children had rheumatic fever.

Carter described purpuric exudative erythema in a woman of twenty-nine without rheumatic, digestive, or hemophilic disorders prior to the onset of the trouble. The history is briefly as follows:

Twenty-four hours after a late supper of sweet-breads and coffee she had sore throat and eruption of bright red spots on both elbows, which spread next day to other parts of the body. With this were severe pains in the upper abdomen, controlled only with morphine. The joints were generally tender, but none were swollen or red. Excessive indican in urine at beginning of attack only. Two recurrences within three weeks. No kidney involvement. No leucocytosis. No temperature. Always undigested food in stools after a recurrence. Abdominal pain limited to upper abdomen and tenderness especially to stomach.

Hobfield reports multiform exudative erythema, erythema nodosum, rheumatism, chorea, endo- and peri-carditis in a nine-year old boy, with no etiologic factors, no unusual family history. A dilated stomach and gastro-intestinal catarrh were found at autopsy and a definite statement was made that there were no gastro-intestinal symptoms with or preceding the attack.

These cases represent the most usual conditions that occur in the severe forms of the disease and the commonest general manifestations of the trouble. The scarlatiniform variety may occur as a sequence of any of the conditions that bring about the other varieties, but idiopathic cases of the disease are noted.

Millard reports a case which he describes as erythema scarlatiniforme desquamativum in a man who had had yearly attacks since childhood and in whom he states there was distinctly no etiologic factors. The case is given briefly because of its similarity to one of my cases.

Man, thirty-six, afflicted with eruptions covering him from head to foot in two days "closely resembling a severe case of scarlet fever," but with slight pyrexia and spreading more rapidly than scarlet fever. Desquamation in sheets, soles and palms last, lasting three weeks.

Urine normal. No sore throat, no strawberry tongue. Patient had had similar attacks about once a year, irrespective of season, since a child. Once two attacks in three months. Nails shed once. No dietary errors. Eight brothers and sisters, all healthy, but two cousins had had similar but less severe attacks.

It is interesting in connection with one of my cases that all of the child's subsequent attacks, of which there have been eight or ten, were preceded by a slight temperature and bad breath, and the first movements after the attacks have been noted to contain undigested food. It will not do to place too much importance upon this observation, because an infection of any kind might interrupt digestion and cause gastro-intestinal manifestations. It would be impossible to state in such a case what the primary trouble really was.

The particular type of the disease illustrated by Millard's case as well as my two cases has occasionally been considered an idiopathic condition. Its independent existence, however, may be set aside, since it has been shown repeatedly by French writers, in whose country the disorder seems commoner than anywhere else, to be a symptom of some general disorder. Furthermore, v. Duhring of Constantinople has recently reported an epidemic of this form of erythema. The French authors regard the desquamative form as a sub-acute condition, occasionally so obscure in its etiological relations as to make its cause impossible to ascertain. It has resulted from as slight a condition as drug poison and it has complicated a good many of the infectious diseases of childhood.

Its similarity to scarlet fever is beautifully illustrated by both of my cases but more particularly the milder one. The rash was practically indistinguishable from scarlet fever and desquamation took place from the hair to the soles of the feet. The tongue especially was quite typical. Cases are reported where the recurrences are more frequent than they were in my second case, complete desquamation taking place each time, the intervals between the attacks being so short that the skin in some parts of the body was constantly in a state of exfoliation. This condition resembles closely the exfoliative type of dermatitis, which is not infrequently the terminal condition in this peculiar disorder. What helps further to distinguish it from scarlet fever is its earlier period of desquamation, the rather striking absence of throat symptoms in a majority of cases, its recurrence, the absence of the peculiar pale ring about the mouth and a disproportion between the fever and the intensity of eruption.

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Reports of Societies.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.
 THIRTY-FIRST ANNUAL MEETING HELD AT INDIAN-
 APOLIS, IND., OCT. 10, 11 AND 12, 1905.

SURGICAL SECTION.

(Concluded from No. 4, p. 110.)

INTRAPERITONEAL TUBERCULOSIS.

DR. F. F. LAWRENCE, of Columbus, Ohio, read a paper on this subject in which he drew the following conclusions: "1. Intraperitoneal tuberculosis is frequently a local disease. 2. It probably occurs much more frequently in the female than in the male. 3. In a large majority of cases it is primarily visceral and the general peritoneum is secondarily involved. 4. The surgical treatment is rational, sometimes agreeably surprising in results, and again bitterly disappointing. 5. In this, as in many other surgical conditions, early diagnosis and early operation will bring more certain results. 6. In this condition the greatest obstacle to overcome is the idea that it is a secondary condition. 7. No case of intraperitoneal tuberculosis should be denied the benefits of operation, no matter how extensive, so long as there is no positive pulmonary or pleuritic involvement, for the reason that some apparently hopeless cases fully recover. 8. When there is a tubercular peritonitis, a sequeal of tubercular tubes, ovaries or appendix, the primary focus should always be removed. 9. In these tubercular cases the mesenteric glands have not been found frequently involved, and when they are operation accomplishes very little good. 10. In tubercle of tubes and ovaries the adhesions are usually firm, sometimes, though not usually, very vascular and not infrequently involve loops of the small intestine; hence the greatest care is necessary to avoid serious injury to bowel and at the same time separate completely all adherent surfaces and provide complete drainage. 11. Drainage is the great factor in recovery, when properly carried out."

PYLOREPLASTY WITH THE MCGRAW LIGATURE.

DR. J. HENRY CARSTENS, of Detroit, Mich., said that many cases with disturbances of indigestion could not be diagnosed or relieved by medication. These should be subjected to an exploratory celiotomy. Gastro-enterologists should not treat patients for months and years if they could not make a positive diagnosis or cure the patient. After reasonable efforts the patient should be sent to the surgeon for relief. The McGraw ligature was a valuable means of relieving stricture at the pylorus and the resulting dilatation of the stomach. This method of operating was easy and quick, the danger was very small, and the operation was preferable to those heretofore used in benign contractions at the pylorus. It was a great deal better than gastro-enterostomy, as one restored as nearly as possible the normal condition. Quite a number of gastro-enterostomies had been reported, with a most gratifying result in some of the cases, but the difficulties

encountered, the trouble with the vicious circle, frequently called for a double operation. The McGraw elastic ligature method should be the operation of choice.

Dr. Carstens concluded by saying that: (1) Many stomach troubles were due to mechanical means. (2) These cases could only be relieved by surgery. (3) Many cases could not be properly diagnosed in the present state of our knowledge. (4) Obscure cases that had been subjected to various modes of treatment without benefit should receive the benefit of an exploratory celiotomy.

OVARIAN CYSTOMA.

DR. L. P. LUCKETT, of Terre Haute, Ind., reported a case of ovarian cystoma upon which he had operated. The tumor originated from the left ovary, was attached by a broad pedicle which was tied off in sections. The uterus and right ovary were found to be normal. The fluid and tumor were estimated to have weighed between seventy and eighty pounds. The patient made an excellent recovery.

SURGICAL TREATMENT OF NEPHRITIS.

DR. ALEXANDER HUGH FERGUSON, of Chicago, presented a further report on the surgical treatment of this disease. He reported seven cases upon which he had operated, with two deaths.

CASE I. Capsulectomy and nephrotomy; return of symptoms; no second operation; still improved.

CASE II. Chronic nephritis and pregnancy; unilateral capsulectomy and nephrotomy, with recovery.

CASE III. Chronic painful left interstitial nephritis, capsulectomy and nephrotomy, followed by recovery.

CASE IV. Nephritis; unilateral capsulectomy and nephrotomy, with recovery.

CASE V. Nephritis; unilateral capsulectomy and nephrotomy; death.

CASE VI. Bilateral nephritis; bilateral capsulectomy; unilateral nephrotomy; multiple punctures on the other side; death.

CASE VII. Double recapsulectomy; multiple punctures; patient progressing toward recovery.

DR. MAXWELL J. ROSENTHAL, of Fort Wayne, Ind., discussed the subject of

CLOSURE OF UTERO- AND VESIO-VAGINAL FISTULA.

and reported a case. The author concluded by saying that a considerable area of scar tissue and vaginal mucosa might be inverted into the bladder without producing ill effects. Uteral isthmus embedded in scar tissue might be inverted into the bladder and continue to discharge its urine without becoming stenosed. Even large vaginal fistulae, where part of the bladder walls were lost in scar tissue from a previous hysterectomy, might be successfully operated by the operation of denudation and closure through the vagina without disturbing the relations of the bladder or any adhesions of pelvic viscera which might have formed in the scar.

SPRAINED ANKLE.

DR. ROBERT CAROTHERS, of Cincinnati, Ohio, read a paper on this subject in which he drew the following conclusions: "1. No one is exempt from a sprained ankle although some are more prone to it than others."

2. That in severity, a sprained ankle will range from a trivial incident to one of extreme severity, which may last long. 3. That the outer side is more often than the inner side of the ankle is the seat of trouble. 4. That the diagnosis which is ordinarily made with ease is at times made with difficulty, and occasionally a very examination is required to make the diagnosis certain.

(5) That the treatment by immobilization with a plaster-of-Paris cast is unsatisfactory and at times injurious. (6) That the treatment instituted by Cotteral, the so-called adhesive plaster strappings, advising and urging the patient to walk on the injured foot, the early removal of these straps, followed by massage, gives the most satisfactory and best results. (7) That the old cases are to be, under anesthesia, converted into acute sprains and treated in the same manner.

DR. DAVID C. PEYTON, of Jeffersonville, Ind., reported an interesting case of pyemia following an operation for appendicitis.

APPENDICITIS.

DR. R. E. HAUGHTON, of Richmond, Ind., followed with a paper on the history, differential diagnosis, pathology and etiology, medical and surgical treatment, of this disease. He presented a brief history and plea for an abatement of the use of the knife in place of treatment by remedies, in view of the statistics and results.

SHALL THE PROFESSION OR THE LAITY BE RESPONSIBLE FOR THE DEATH-RATE IN APPENDICITIS?

DR. J. C. O'DAY, of Oil City, Pa., said that every physician, when confronted with a case of appendicitis, should frankly tell the patient the nature of his trouble; explain to him, honestly and candidly, the disposition of his disease; that no one could tell what an inflamed appendix would do, and that there was no safety till the offending organ had been removed. If the patient then decided to defer operation, he, not the surgeon, should be responsible. If it were done, he thought we would hear no more complaints of, Why did not the physician advise operation before it was too late?

SARCOMA OF THE ANTERIOR SEGMENT OF THE GLOBE.

DR. O. TYDINGS, of Piqua, Ohio, presented a brief history of a patient upon whom he had operated for the removal of melano-sarcoma of the anterior segment of the globe. The diagnosis of melano-sarcoma was confirmed by competent pathologists. Five days after the removal of the tumor the patient dropped out of sight and the speaker did not see him again until the following August. There was no recurrence; the cicatrix was smooth; the lone pigmented spot, not larger than a pin-point, which the author took to be the remains of an old hernia of the iris, was still present, but absolutely quiescent. The patient's vision which, when he first saw him, was right eye, 20-40, and when operated 20-200; left 20-30, was now 20-20 in each eye. So far as the author had been able to examine authorities, the case stood alone. Primary melano-sarcoma of the cornea is rare. Nine cases had been reported of sarcoma of the cornea by different authorities. None of these cases, however, according to an English authority, was above suspicion.

THREE CASES OF EXTRAPERITONEAL RUPTURE OF THE BLADDER COMPLICATING FRACTURE OF THE PELVIS, WITH RECOVERY.

DR. JOSEPH RILUS EASTMAN, of Indianapolis, said that injuries of the pelvic bones were attended with more or less risk to life which did not ensue solely from the damage done to the bones themselves, but arose usually from the injuries done to the viscera of the region involved. Formerly, death occurred in a large percentage of cases of rupture of the bladder.

The mortality was naturally much higher in those cases in which a tear of the peritoneum made possible

the entrance of urine into the peritoneal cavity. However, extravasation of urine through the pelvic connective tissue in cases of purely extraperitoneal bladder rupture also formerly caused a high mortality rate. This mortality rate had been decidedly decreased by modern methods of dealing with shock, and free and rational bladder drainage. The immediate and characteristic symptoms of the injury were intense pain in the abdomen, collapse, and great irritation of the urinary reflex, with ineffectual attempts to void urine. Inability to void the urine was usually present, whether the peritoneum was torn or not. If the peritoneum was injured, peritonitis of the sthenic type developed duly. As the injury usually occurred while the bladder was full, an area of dullness and tenderness was to be found over the bladder, extending irregularly beyond the normal limitations of bladder dullness, and a large amount of bloody urine might usually be withdrawn by catheterization.

As to the diagnosis of fracture of the pelvis itself, this could occasionally be made visually. Usually, however, the surgeon must depend upon his senses of sight, touch and hearing for the well-known signs of fracture, deformity, abnormal mobility and crepitation. The deformity was usually not pronounced.

In the three cases described by the author, the treatment consisted in combating shock, chiefly with normal salt solution and adrenalin, in the removal of clot, suture of the rent in the bladder, appropriate bladder drainage, rest and the application of a bandage in such a manner as to prevent movement of the pieces of bone which were broken off.

The following papers were also read: "Note on Bone Tuberculosis, with Report of a Case," by Dr. W. W. Vinnedge, Lafayette, Ind.; "Post-Operative Acute Dilatation of the Stomach, with Report of a Case following Nephroproxy," by Dr. A. E. Halstead, Chicago; "Treatment of Tuberculosis of the Cervical Lymphatics," by Dr. H. C. Sharp, Jeffersonville, Ind.; "Visceral Ptosis; Its Surgery," by Dr. Earl Harlan, Cincinnati, Ohio; "The After-Treatment of Gastroenterostomy," by Dr. Charles A. L. Reed, Cincinnati, Ohio; "Cysts of the Mesentery, with Report of a Case," by Dr. L. G. Bowers, Dayton, Ohio; "Perforating Ulcers of the Duodenum, with Report of a Case," by Dr. M. A. Austin, Anderson, Ind.

The following preamble and resolution were unanimously adopted by the Section:

WHEREAS, the medical profession keenly realizes the great and increasing public evil, moral, mental and physical, arising out of the support given by the public press to the so-called patent medicine interests, leading to the pernicious practices of self-drugging, narcotic habituation and alcoholic excess; be it

Resolved, That the Mississippi Valley Medical Association commends and frankly endorses the attitude adopted by *Collier's Weekly* and the *Ladies' Home Journal* in giving publicity in the articles by Samuel Hopkins Adams, Norman Hapgood and Edward Bok, respectively, to the truthful exposure of the nefarious practices and unscrupulous methods of the so-called patent medicine concerns."

OFFICERS.

The following officers were elected for the ensuing year: President, Dr. J. Henry Carstens, Detroit, Mich.; First Vice-President, Dr. Joseph Rilus Eastman, Indianapolis, Ind.; Second Vice-President, Dr. H. H. Grant, Louisville, Ky.; Secretary, Dr. Henry Enos Tuley, Louisville, Ky., re-elected; Treasurer, Dr. S. C. Stanton, Chicago, re-elected.

Hot Springs, Ark., was selected as the place for holding the next annual meeting.

MEDICAL SECTION.

WHAT IS THE PRESENT CONCEPTION OF BRIGHT'S DISEASE?

DR. G. W. McCASKEY, of Fort Wayne, Ind., read a paper on this subject, in which he said that the only possible justification for the use of the term was an historical one, and while its meaning must in a sense change with the changing views of pathology, yet the primary groundwork which constituted the historical basis on which it stood should be kept constantly in view. He presented a brief inquiry as to the character of the group of morbid states and symptoms originally described by Bright. The investigations of Gull and Sutton on the relation of arterio-capillary fibrosis as a cause of contracted kidney were the most important steps in broadening the views entertained concerning Bright's disease. They demonstrated the systemic or hematogenous character of one clinical type of the disease, which naturally stimulated thought and investigation with reference to other types along the same line. In spite of the advances in pathological doctrine, in spite of the mutations of opinion and classification, one could not but be impressed by the close resemblance between the views entertained to-day and those of half a century ago concerning what might be called the gross features of Bright's disease.

For the purpose of a broad general view of the subject, the author divided the causal conditions into six classes: (1) The acute infections; (2) Chronic infections; (3) Chemical poisons introduced into the circulation, of which lead may be taken as a type; (4) The influence of cold; (5) The products of perverted gastro-intestinal function, and especially intestinal putrefaction; and (6) The products of perverted metabolism.

THE COMBINED METHOD OF TREATMENT IN THE ARREST AND CURE OF TUBERCULOSIS.

DR. H. B. WEAVER, of Asheville, N. C., stated, among other things, that in order to wage a successful warfare against tuberculosis and prevent its spread, the method which was pointed out by nature consisted in increasing as far as possible the organism. All efforts, therefore, should be directed toward that goal. As only two per cent of tuberculous patients were treated in sanatoria, that method could not now bring the desired relief. Ninety-eight per cent of patients were treated in their homes. Therefore, the general practitioner, as remarked by Osler, was, after all, the man behind the gun in this warfare, and to him, and through him, we must look for ultimate success. Tuberculosis would only then be vanquished, when it shall have become possible to strengthen the organism and assist with specific powers which will render it immune against the disease.

THE TREATMENT OF TUBERCULOUS PLEURISY WITH EFFUSION.

DR. THEODORE POTTER, of Indianapolis, Ind., submitted for consideration the following propositions: (1) That the profession had gone too far in accepting the general principle and following the general practice that pleural serous effusions, unless they showed a tendency to early absorption, should be removed. (2) Granting that in the majority of such cases pleurisy was the dominant feature and removal of the fluid the proper procedure, and that such removal would probably tend to arrest the pleural tuberculosis, which was usually present, nevertheless, the best results ought to be obtained by dealing with each case upon its own merits. (3) In cases in which the pleurisy was the sole or dominant feature, the removal of the fluid was

the proper treatment; and in proportion to the accuracy of differentiation between the pleural and the pulmonary disease would be the promise of good results by removal of an effusion. (4) In cases in which tuberculosis of the lung was evidently or probably the overshadowing feature, a conservative course as regards the removal of a serous effusion was the proper one. In some cases the fluid had best be left to nature to take care of, with the hope that the compression, immobilization and physiological quietude of the tuberculous lung might tend to arrest the disease. In other cases of this type the removal of the fluid should be undertaken only upon a deliberate judgment, after due consideration.

TUBERCULOSIS IN GENERAL PRACTICE.

DR. HUGH A. COWING, of Muncie, Ind., said that in his relation to tuberculosis the general practitioner should exercise great care in physical examination. He should strive to make an early diagnosis. He should carry a life-saving knowledge into the tuberculous home, improve its hygiene and teach sanitation. He should employ the pure air treatment. The method would vary to suit the individual case and condition. He should co-operate with health boards, and report cases. He should count the cost before sending the patient to a health resort. He should study health resorts and sanatoriums, and visit them, if possible. He should oppose quack consumption cures and quack doctors who "cure consumption." He should influence the press for sanitation. He should fight patent medicines. He should expose Christian Science, and kindred fads that rob the consumptive of his chance for life. He should endeavor to seek legislation for sanitary advancement. He should help to popularize the consumptive sanatorium and health farm. Membership in a society for the prevention of tuberculosis would make the physician's work more effective.

THE MANAGEMENT OF NEURASTHENICS.

DR. H. A. RODENBACH, of Columbus, Ohio, said that an individual became neurasthenic only after having suffered from some of the psycho-neuroses, the latter having been caused by traumatism, by disturbed metabolism, or by peripheral nerve irritation. Heredity, occupation or environment could hardly be considered etiological factors without further specification. Neurasthenia should be considered a mental rather than a physical disease. Mental symptoms often persisted after removal of all physical causes, and could only be relieved by psychic treatment. Mental hygiene was both preventive and curative. The neurasthenic should be taught that a healthy mental attitude conduced to bodily health.

AUTO-INTOXICATION.

DR. D. L. FIELD, of Jeffersonville, Ind., read a paper on this subject. After referring to the theories and definitions of auto-intoxication by Bouchard and others, the author said that the part played by the intestinal emunctories in the elimination of certain poisonous substances was attested by the commonly fetid stools of persons who frequented post-mortems. The fetid character recalled the putrid odor of the emanations from the cadaver.

If poisonous products had been absorbed, an effort should be made to destroy them. The liver had the power of arresting poisons. It withdrew them from the intestines and eliminated destroyed them. One should, therefore, stimulate its action by proper therapeutic measures. If the poisons had escaped the liver, they should be eliminated by the skin, the lungs,

the intestines and the kidneys. If all these attempts failed, one should have recourse to certain antidotes which tended to counteract the physiological effects of the poisons which menaced the system. As a striking example he mentioned the antagonistic properties of poisons in atropine and pilocarpine. The strength of the patient should not be neglected, so that he might have time to eliminate the poisons. Sometimes it was only necessary to keep a patient alive a few minutes more in order to save him. We could not provide him with radical force, and what was required was active force. Thus one was led to administer stimulants which might awaken the forces remaining latent. Cases were cited in point.

SOME REMARKS ON THE PATHOLOGY OF EPILEPSY.

DR. MARC RAY HUGHES, of St. Louis, Mo., showed that each epileptic stage had a distinct pathology, and the entire category for classification of epilepsy, including the psychical varieties, had one common pathology or gross structural change, and that this structural change, whether idiopathic or organic, had to do largely with the movements of the centrifugal and centripetal mental forces as they were found in the psychical equivalent of epilepsy, — dual consciousness, obliviousness and allied states of mental eclampsia.

HISTORY AND TREATMENT OF EPILEPSY.

DR. JOHN W. SELMAN, of Greenfield, Ind., after recounting at length the history of this disease, said that every physician acknowledged that the great cause of epileptic convulsions was the sudden liberation or explosion of nerve force which swept everything before it. Epilepsy and other diseases might exist together, and for this reason the prognosis diagnosis were to be carefully formed and given.

Jan. 2, 1905, a man, twenty-eight years old, was brought to him, who was having epileptic seizures five and six times a week. There was no aura. Like a flash he was in hard convulsions. The general appearance of the patient indicated great anemia, malnutrition, with diarrhea. The author at once used subcutaneous injections of normal saline solution, with the bitter tonics and arsenic, and at the expiration of ten days a great change in his condition was noticeable, and in three months he returned home apparently well.

The causes of epilepsy were toxic, reflex and traumatic.

The treatment of the disease was as various as the disease was variable in its forms and phases, and it should in nearly all cases resolve itself into three divisions, consisting in the removal of any exciting cause, in the checking of the convulsive tendency already set up, and in the prevention of any further attacks by suitable drugs or other measures of relief. The treatment was governed largely by the case and was medicinal or operative, according to the causal factors at work. In idiopathic epilepsy medicinal means should be followed; while in a case resulting from traumatism, the depressed bone, abscess or tumor should be removed.

THE CIGARETTE; ITS RELATION TO MENTAL AND NERVOUS DISEASES.

DR. W. B. FLETCHER, of Indianapolis, Ind., quoted extensively from articles by physicians and prominent laymen on the cigarette habit, and said that he had sometimes asked himself if the members of the medical profession were not largely responsible for the widespread prejudice against the cigarette. It was so much easier to agree with the grief-stricken

mother in assigning the cause of the loved one's downfall to the innocent habit of cigarette smoking than to say to her frankly the real cause which examination had revealed or which had been imparted under the seal of professional confidence. In the past twenty-two years he had examined over twelve hundred cases of nervous disease and insanity brought to the Central Hospital for the Insane, or in his private practice, where the cause of the malady was given by their friends as the cigarette habit. In not one case had he reason to believe that tobacco had anything to do with the causation of the disease. They were all young men and some of them insane without doubt. Some of them smoked cigarettes to excess, but their insanity was only a cause of their excess, and not the excess the cause of the insanity. Many of them were simple cases of hebephrenia, with a cigarette attachment, so to speak. One poor fellow, sixteen years of age, and at the time in acute mania, had been severely punished by his father to "beat out the cigarette habit." After three months he recovered and proved to be an unusually bright and truthful boy. He acknowledged that he had smoked three cigarettes in his life just before his mind gave way from overwork in the harvest field. Some of the cases were tuberculosis of the brain, but he thought he was safe in saying that fully ninety per cent were young fellows reared in idleness, who had acquired other habits of vulgar and vicious companions which were reducing their vitality and sapping their brain, and the cigarette was used as a cover by patient, parents and friends as a scapegoat, or an excuse to hide their shame.

A PLEA FOR MORE MORAL RESTRAINT FOR STUDENTS IN MEDICAL COLLEGES.

DR. JOHN M. BATTEN, of Downingtown, Pa., said there were three classes of students at medical colleges: First, those who had good morals, were industrious and ambitious, and had a high ideal objective point. Second, those whose morals were questionable, and were not as industrious as they should be, and were lacking in ambition, and consequently their ideal objective point was only mediocre. This class of students was easily led into evil habits. Third, there was a class of students who might have plenty of means furnished them for necessary and other expenses. Their ideal objective point in life was not high. Their morals were corrupt, and they had not been taught the value of economy. This class of students schemed to do evil and endeavored to corrupt others with whom they associated. He thought no medical college should have a charter that could not and would not provide for sufficient moral protection over the students who attended such institutions.

THE TONIC ALTERNATIVE ACTION OF COPPER AND ARSENIC IN PRIMARY AND SECONDARY SPANEMIC STATES.

DR. GEORGE F. BUTLER, of Chicago, said that arsenic had a very decided action on tissue change and markedly affected the glandular, nervous, respiratory and cutaneous systems. Copper was reputed to be a violent poison, yet, except so far as its toxic effects as a foreign body in the eye was concerned, this repute was decidedly undeserved. Copper was recommended as an alternative tonic useful in epilepsy, chorea and other spasmodic conditions, especially those connected with debility by the older authors, and later therapeutists sustained this old repute of copper. Several authorities were quoted to the effect that the drug, in small doses, stimulated both the heart and the capillary circulation, and was a general nerve tonic. As to the preparation to be employed, all agreed that while

copper sulphate was of value, it had at times unexpected, dangerous, untoward effects when the point of saturation was reached. These effects, through the influence of the drug on the vascular system, often took the direction of cardiac neuralgias and pseudo-anginas. The double salts of copper in small doses exerted a cardiac action similar to that of digitalin, strophanthus, helleborein, etc. Rare preferred copper arsenite. He had found that under its use digestion and nutrition improved. It was superior to Fowler's solution in chorea and similar neuroses. In toxic conditions, like secondary malarious manifestations with the resultant pallor, copper and arsenic were of decided value. Cases in which the periodic tendency had disappeared improved decidedly under copper and arsenic, whereas quinine and iron were worse than useless. The influence of arsenic was very marked on chronic rheumatism and so-called rheumatic gout, neuralgias of various sorts, in tic and hemiplegia, as well as in angina pectoris, chorea, epilepsy and asthma. In certain of the gouty bronchitides, at the onset of phthisis, in imperfectly cleared up pneumonic lung consolidation, arsenic acted sometimes with remarkable efficiency. The influence of both drugs on the liver, whose double functions were so necessary to the tissue changes of the system, showed that both played a part in assisting assimilation, and at the same time destroying waste products.

THE CLAIMS OF THE ADOLESCENT.

DR. FRANK P. NORRICKY, of Jacksonville, Ill., said that the claims of the adolescent for recognition by the medical profession were genuine, not hypothetical, and involved three important considerations: (1) Physiological — a study of growth, development, sex differentiation. (2) Psychological — normal and morbid, involving honest endeavor of the physician to see the real needs of the individual. (3) Pedagogical — training and treatment to go together.

All of these considerations showed that a demand existed for qualified men to consider earnestly the problems of mind and body of this period.

The following papers were likewise read: "Heads and Tales," by Dr. T. B. Grosvenor, of Meadow Lawn, Ky.; "Simple Eye Conditions that Should be Familiar to Every Physician," by Dr. Mark P. Stevenson, of Akron, Ohio; "Some Interesting Problems in Urinary Diagnosis," by Dr. Arthur R. Elliott, of Chicago; "Concerning Hepatic Uremia and its Treatment," by Dr. Alfred C. Croftan, of Chicago; "Enterotoxism (Auto-Intoxication) from Meat," by Dr. Fenton B. Turck, of Chicago; "The Leucocytes in Pertussis," by Dr. F. S. Churchill, of Chicago; "Remarks on Polymyelitis," by Dr. Hugh T. Patrick, of Chicago; "Demonstration of Sleep-Inducing Method," by Dr. J. B. Learned, of Northampton, Mass.; "Some Rare Sequels of Syphilis," by Dr. Henry J. Scherck, of St. Louis, Mo.

Recent Literature.

The Treatment of Fractures. By CHARLES LOCKY SCUDDER, M.D., Surgeon at the Massachusetts General Hospital. Fifth edition, thoroughly revised. Octavo, 563 pages, with 739 illustrations. Philadelphia and London: W. B. Saunders & Co. 1905.

Dr. Scudder's efforts to keep his work on Fractures up-to-date and its popularity are apparently the chief causes for the appearance of the

fifth edition of this work. Few medical books have met such a demand as to require five editions in as many years.

The "form" of the work, both as regards arrangement and subject matter, is essentially the same as in previous editions. As regards the illustrations, which are increased in number from 688 to 739, many "x-rays" are reproduced to illustrate the actual line of fracture. The volume, still an octavo, is enlarged from 531 to 563 pages by the additions to this edition. The author states that he has carefully revised the text and made such additions and changes as more extended experience indicated. He calls attention to the changes now taking place in the treatment of fractures of the hip which may possibly radically alter the treatment of this injury.

The chief characteristics of this book, as well as of its previous editions, are the graphic, precise manner of presenting the actual condition of the fractured bones by reproduction of x-ray plates and anatomical descriptions; the reproduction of photographs of the actual clinical lesion; and the attention to detail in description of treatment. In a large majority of instances the statements of the writer represent the best modern opinions and methods.

Points for criticism are not easily found. Among those noted are the wrong lettering of some of the muscles in the plates showing the pathological anatomy of the muscles in dislocation of the shoulder, which occurred also in the fourth edition, and is uncorrected in this, and that the article on dislocation of the hip is disproportionately short considering the importance of the lesion. It is very concisely written and without illustrations.

The bibliography appended is a valuable addition to the work and includes the titles of many noted monographs. As a whole, the book still stands as an exponent of the modern treatment of fractures.

The Thyroid and Parathyroid Glands. By HERMUT RICHMONDS, M.D., late Pathologist to Mount Hope Retreat; Pathologist to Maryland Asylum and Training School for Feeble-Minded Children; Demonstrator of Physiologic Chemistry, University of Maryland. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1905.

This book is a monograph on the subject of the thyroid and parathyroid glands. The author has collected into the relatively concise limits of a book of 261 pages the main facts at present known regarding the subjects of which he treats. The physiology, chemistry and pathological anatomy of the glands are considered in considerable detail, together with a description and discussion of the various forms of disease now supposed to be more or less directly associated with disease of the glands. A bibliography and an index complete the volume. The illustrations are somewhat crude, but adequate to show the conditions under consideration.

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MEDICAL REPRESENTATION IN THE
CENTRAL GOVERNMENT.

THERE is a growing feeling that medical men should take a more active part in political affairs and in the general concerns of government. The idea formerly held that a physician transcended his proper sphere when he extended his interests beyond the actual practice of his profession has, in great measure, given place to a more liberal point of view. It has again and again been demonstrated that the peculiar knowledge which a physician brings may often be of the greatest service in the framing of laws or in the conduct of various enterprises. The physician, therefore, is coming to occupy a less and less isolated position, and is making himself felt in matters not immediately concerning his technical professional work. Unfortunately, as our government is constituted, it is not possible for men eminent in medicine to devote the requisite time to the work of important legislative positions without giving up in great measure their professional work. It would, no doubt, be well if the medical profession were represented by certain of its most distinguished members in the United States Senate and the House of Representatives, but this, unfortunately, is not feasible, and the medical profession must content itself in this country with minor positions which carry possibly certain influence but very little authority.

It is of interest to turn from this situation to the conditions as they exist in England. There has for many years been a representation of medical men in the House of Commons, and often men of great eminence in their profession. In the recent parliamentary upheaval a considerable

interest is being aroused as to the character of the medical representation of the next parliament. A recent number of the *British Medical Journal* comments at considerable length upon the situation. The number of physicians in the last House of Commons was very limited, and the medical profession in England feels that the next should see a larger representation. There were but nine medical men in the house recently dissolved, and unfortunately some of these showed little interest in the medical questions coming before Parliament. Others, however, have taken a most active part in the discussion of matters bearing upon medicine, among which are such well-known names as the Rt. Hon. Sir Walter Foster, Sir John Batty Tuke, Sir Michael Foster, Dr. Hutchinson and Dr. Ambrose. These men are all seeking re-election. Sir Michael Foster's career in Parliament has been a peculiarly interesting one. He has represented the University of London since 1900, has gained for himself a place of influence, and has commanded the respect of both parties in his judgment concerning matters affecting the public health. He has strongly supported efforts for the improvement of vaccination, has interested himself in the tenure of office of medical officers of health, and in academic affairs has admirably represented the modern spirit which has done much to revivify the University of London. Sir John Batty Tuke has represented the Universities of Edinburgh and St. Andrew's and has been an active supporter of the British Medical Association. His interest in the various bills presented for the betterment of medical conditions has been unceasing and his activities have covered a wide range of subjects. The services rendered by Sir Walter Foster are hardly less deserving of mention, particularly in relation to the political situation of the medical profession. The other medical members, whose names we have mentioned, have also rendered valiant service in upholding the best interests of the medical profession.

Our contemporary, nevertheless, dwells upon the feeling of dissatisfaction with the work done in the House of Commons by its medical members. It also, very rightly, suggests the enormous difficulties which face the relatively few men in legislative office in securing the passage of the measures in which they and the profession at large are interested. The general situation in England, however, appears to be in some measure better than with us, inasmuch as men of the highest standing in their profession are placed in

positions of relative authority in which they may at least express and demand a hearing for measures of benefit to the profession and so indirectly to the people at large. Possibly in this country public opinion in a measure takes the place of this more direct representation, but we are disposed to think that much here might also be accomplished could we have a few fitting spokesmen for the profession of medicine at Washington representing various portions of the United States.

STUDIES IN AMEBIC DYSENTERY.

We have repeatedly called attention to the excellent scientific work being done at the Government Laboratories in Manila. Among the recent publications is a discussion of intestinal hemorrhage as a fatal complication in amebic dysentery and its association with liver abscess, a paper upon the action of the various chemical substances upon cultures of amebae and an investigation on the pathology of intestinal amebiasis. In all of these papers a definite contribution is made to our knowledge of diseases which occur too infrequently in this climate to render their investigation possible. Dr. Richard P. Strong in the first of these papers calls attention to the relation of hemorrhage in amebic dysentery to abscess of the liver. A study of this matter has led him to the conclusion that fatal intestinal hemorrhage in the disease under consideration probably will be shown to occur frequently in conjunction with hepatic abscess, although such an association is not inevitable. The investigation also shows that the diagnosis of liver abscess may be suggested by the occurrence of multiple intestinal hemorrhages in the course of amebic dysentery.

Dr. J. B. Thomas offers a useful discussion on the action of certain chemical substances upon cultures of amebae, and as a result of his experimentation reaches the conclusion that the most marked effect upon the growth of cultures is produced, among various other substances, by permanganate of potash in solution 1-2000, sulphate of quinine 1-500, nitrate of silver 1-2000, argyrol 1-500 and protargol in the same dilution. Each of these substances produces a marked effect on the growth within twenty minutes, due in most cases to the destruction or inhibition of the growth of the symbiotic cholera spirillum. From a practical standpoint this shows that there is no specific treatment for amebic dysentery, but it also indicates that there are various other drugs equal or superior to the much used quinine. As suggested by the writer of the paper, this will

be appreciated by physicians practising in the tropics among patients who for any reason cannot take quinine.

Writing on the pathology of intestinal amebiasis Drs. P. G. Woolley and W. E. Musgrave arrive at interesting conclusions regarding the ulcerative condition of the intestine caused by *Ameba coli*. This intestinal amebiasis is usually confined to the large intestine, but both the ileum and the appendix may be involved. Usually the cecum and the ascending colon are affected, but in the majority of cases the entire bowel takes part in the process. The ulcers show a tendency to be undermined and the organisms may enter the blood stream very early in the disease. The affection is a subacute inflammatory process and complete healing may be accomplished, or a condition of atrophic enteritis may persist which is known as sprue.

These admirable papers are profusely illustrated by finely reproduced halftone photographs, many of them of very high power. Such work is another evidence of the progress being made in the Philippines, not only toward general civilization, but also toward accurate scientific medical work, which must ultimately be far-reaching in its consequences, not only to the islands themselves but to the world at large.

MEDICAL NOTES.

EXTERMINATION OF MOSQUITOES. It is stated that a bill has been introduced into the New Jersey Legislature asking for an appropriation of \$70,000 a year for five years to be used in the extermination of mosquitoes.

THE DISTRIBUTION OF MOSQUITOES IN THE UNITED STATES. C. S. Ludlow reports in the *Medical Record*, Jan. 20, 1906, the results of the collections of mosquitoes made during parts of 1904 and 1905 for the purpose of determining what mosquitoes were present at the various army posts. The first collections were restricted to the southern states, but in 1905 all the stations of the United States were included in the work. The results are expressed in tabular form, and while it appears that *Anopheles maculipennis* and *Culex fatigans* are the two most widely distributed species, for details regarding the fifty odd other varieties mentioned, the original must be consulted.

COMMITTEE OF ARRANGEMENTS—AMERICAN MEDICAL ASSOCIATION ANNUAL MEETING, JUNE 1-8, 1906.—On Sept. 5, 1905, the president of the

American Medical Association appointed the chairman of the Committee of Arrangements, with the request that he nominate the members of the committee. The secretary and five members of the Committee of Arrangements were then appointed, each member being constituted the chairman of a committee, with the privilege of selecting his own committeemen, and his secretary, who should be the executive of the committee. The invitations to serve upon these committees were then issued by the secretary in the name of the Committee of Arrangements at the request of the chairmen of committees.

At a meeting of the Committee of Arrangements, held Dec. 8, 1905, it was voted that the secretaries of committees be made members of the Committee of Arrangements. Each committee may have as many sub-committees as it finds necessary, and each committee is final in its decisions, except when its action will affect (a) the general policy of the meeting, or (b) expense, — in which case the proposed action must be submitted to the Committee of Arrangements for approval.

The following is the announcement of the members of the Committee of Arrangements:

Chairman, Dr. Herbert L. Burrell, 22 Newbury Street, Boston, secretary, Dr. Robert B. Greenough, 8 The Fenway, Boston; Finance: Dr. George B. Shattuck, 183 Beacon Street, Boston, chairman, Dr. Frank B. Harrington, 201 Beacon Street, Boston, secretary; Section Meeting Places, General Exhibit, Printing and Programs: Dr. Reginald H. Fitz, 18 Arlington Street, Boston, chairman, Dr. Elliott P. Joslin, 81 Bay State Road, Boston, secretary; Hotels and Transportation: Dr. Charles Harrington, State House, Boston, chairman, Dr. David D. Scannell, 366 Commonwealth Avenue, Boston, secretary; Entertainments, Banquets, Ladies: Dr. J. Collins Warren, 58 Beacon Street, Boston, chairman, Dr. John C. Munro, 173 Beacon Street, Boston, secretary; Registration, Badges, Bureau of Information: Dr. Charles S. Minot, 688 Boylston Street, Boston, chairman, Dr. William T. Porter, 688 Boylston Street, Boston, secretary. The office of the Committee of Arrangements is at the Boston Medical Library, 8 The Fenway, Boston, Mass.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, Jan. 31, 1906, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 38, scarlatina 30, typhoid fever 9, measles 180, tuberculosis 60, smallpox 0.

The death-rate of the reported deaths for the week ending Jan. 31, 1906, was 18.93.

BOSTON MORTALITY STATISTICS. — The total number of deaths reported to the Board of Health for the week ending Saturday, Jan. 27, 1906, was 212, against 204 the corresponding week of last year, showing an increase of 8 deaths and making the death-rate for the week 18.58. Of this number 108 were males and 104 were females; 208 were white and 4 colored; 137 were born in the United States, 71 in foreign countries and 4 unknown; 44 were of American parentage, 141 of foreign parentage and 27 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 39 cases and 1 death; scarlatina, 37 cases and 4 deaths; typhoid fever, 10 cases and no deaths; measles, 185 cases and 3 deaths; tuberculosis, 48 cases and 21 deaths; smallpox, no cases and no deaths. The deaths from pneumonia were 41, whooping cough 0, heart disease 22, bronchitis 6 and marasmus 1. There were 7 deaths from violent causes. The number of children who died under one year was 44; the number under five years, 60. The number of persons who died over sixty years of age was 50. The deaths in public institutions were 75.

There were 6 cases and 5 deaths reported from cerebrospinal meningitis during the week.

DEATHS FROM CEREBROSPINAL MENINGITIS. — A number of deaths have occurred among the apprentices at the naval training station at Newport, R. I., from cerebrospinal meningitis. A few days ago eight deaths had been reported and there are still a certain number of cases under treatment. The disease has, apparently, also made its appearance in Cambridge, Mass., where within a week five cases have developed, three in one family. These cases were all in young children.

THE RELATION OF THE MEDICAL PROFESSION TO THE LAW AND THE COURTS. — Four lectures, on the relation of the medical profession to the law and the courts, will be delivered by Ezra R. Thayer, LL.B., in Lecture Room E, of the Harvard Medical School, on four successive Monday evenings, at eight o'clock, beginning Feb. 12. These lectures will be open to medical students and the profession. Such a course of lectures as this has long been needed. It is desirable that the close relationship which exists between medicine and certain departments of law should be emphasized, and especially that students and practitioners of medicine should have a clear idea

of the legal requirements of their profession. Mr. Thayer is admirably fitted to undertake the task of presenting the subject in an understandable way.

NEW YORK.

BERI-BERI.—In the first of the Cartwright lectures for 1906, delivered at the New York Academy of Medicine on Jan. 25, Baron Takaki devoted his attention largely to the subject of beri-beri. He stated that this disease, which was formerly a very prolific source of death, has now been exterminated in the Japanese navy, and that this result was effected by the substitution to a considerable extent of nitrogenous food for the disproportionately large percentage of carbohydrates formerly employed. On Jan. 28, Dr. Louis I. Seaman gave a reception for Baron Takaki, which was largely attended.

NEW SERUM IN TREATMENT OF EXOPHTHALMIC GOITRE.—At a meeting of the Medical Society of the County of New York, held Jan. 22, reports were made of the successful use of a new serum in the treatment of exophthalmic goitre. This serum, it would appear, can be made only from the diseased thyroid gland of the human subject. The first experiments leading to the discovery were made by Dr. S. T. Beebe of the Loomis Laboratory, Cornell University, who obtained the thyroid of a patient who had died of Graves's disease and injected material from it into rabbits, afterwards preparing the serum in the same way as other serums. The new serum was first employed practically in the treatment of cases of Graves's disease by Dr. John Rogers, instructor in clinical surgery in the Cornell Medical School, and afterwards by Dr. W. Gilman Thompson, Professor of Medicine, and in every instance, so far, it has been attended with positively curative results. It is stated that one of the patients treated by Dr. Thompson was almost at the point of death, and now has been completely restored to health. The course of treatment is a short one, a small quantity of the serum being hypodermatically injected every second day for a period of about two weeks, and the cure appears to be permanent.

POSSIBLE ENCOURAGEMENT OF QUACKERY

Quackery of various kinds will receive a certain amount of encouragement from and no doubt make the most of an elaborate dissenting opinion which Justice Deuel of the Court of Special Sessions has filed in the case of an exponent of "Neuro-Mechano-Therapy" against whom the County Medical Society had secured a conviction

and punishment by fine for practising medicine without a license. In commenting on this, the *New York Times* admirably says that this judge "was able to see validity in the contention, so lamentably familiar to everybody who has followed the desperately persistent attempts of the ignorant and unqualified to break into the medical profession without going to the trouble of studying medicine, that nothing is 'the practice of medicine' except the administration of drugs."

It is his opinion that a man may advertise himself as a doctor, may hold himself out to the public as competent to diagnose and treat every malady from which human kind suffers, and may take such fees as trusting patients choose to pay, but if he refrains from giving drugs he is not a practitioner of medicine and does not come under the law which insists that doctors must have a reasonable minimum of special education for their work.

We shall watch the literature of quackdom with interest to see how soon its purveyors forget to note the fact that Justice Deuel's opinion was a dissenting one. It will not be long."

Miscellany.

IMPURE DRUGS AND PROPRIETARY MEDICINES.

At the meeting of the New York Academy of Medicine on Jan. 18, impure drugs and deleterious proprietary medicines were the subjects of discussion. Dr. H. M. Biggs, medical officer of the Health Department, expressed the opinion that all drug stores should be placed under official supervision. It was scarcely realized, he said, how completely the physician was at the mercy of the pharmacist. In a very large number of the New York shops the drugs sold are either inert or adulterated with active poisons like wood alcohol. Even the large houses are not free from guilt in this matter. What, then, can be expected from the small dealers? Drs. Hirschman and Atkinson, of the department, then gave some of the results obtained from the examination of samples purchased in the drug stores, fully substantiating the statements of Dr. Biggs. Dr. George I. Peabody emphasized the harm done to the public by the secret preparations so widely advertised, and cited a number of instances in point. A certain predigested beet extract analyzed at Harvard contained 30% of alcohol, and if the dose directed were taken, the patient in the course of a day would take 14 oz. of nutriment and 6 oz. of whiskey. A certain preparation also contained 30% of alcohol, and in 64 sorts of tonics and bitters, the percentage of alcohol varied from 21 to 42. We cannot prevent a man from buying what he wants, he said, but we should insist that he should be informed

of the real character of what he does buy. To accomplish this, Dr. W. Gilman Thompson asked the support of the Academy for a proposed bill compelling the labelling of all proprietary medicines with a statement of their ingredients, with the quantity of each, and imposing a heavy fine for infractions of its provisions. Resolutions were then adopted urging the council of the Academy to take action in the matter, and also to bring to the attention of the Health Department the action of the Massachusetts Board of Health in preparing a list of harmful preparations.

A UNIQUE CASE.

Dr. P. F. O'HANLON narrates the following "Coroner's Case," in the *New York Medical Journal*: "A man, G. B., was taken to the House of Relief by its ambulance in a state of collapse following three days of gastric disturbance of which constant vomiting was the most predominant symptom. He died. The autopsy revealed a lump or tumor in the small intestine two feet from the ileocecal valve. It was movable. That part of the intestine from the point of tumor to the valve was collapsed, behind the intestinal tube was markedly dilated. Opening the intestine the tumor was seen, its form oval and as large as a goose egg. It had the appearance of fat. It was not decided at the autopsy what it consisted of. One half of the substance was sent to Dr. Roper, of the New York Hospital Laboratory, and the remaining to Dr. Hodenpyl, of the College of Physicians and Surgeons.

"After a time these gentlemen made the report that the tumor was a peach. The statement was made after making sections and microscopic examinations, and comparing with fruit of the above named kind.

"How or in what manner the deceased was able to do this trick which ended his career remains, after most diligent inquiry on my part, a mystery, but a most truthful and interesting fact."

THE STATE BOARD OF CHARITY ON DR. BOWDITCH'S DISMISSAL.

WE find the following statement on page 75 of the Twenty-seventh Annual Report of the State Board of Charity of Massachusetts which is just issued:

"In the opinion of the Board, the dismissal of Dr. Vincent V. Bowditch from his post of visiting physician, for the reasons given by the trustees to the Board, is an injudicious and regrettable step. From the very beginning Dr. Bowditch has been identified with the institution, has served it with skill and devotion, and has contributed greatly to its success and prominence. Owing to early difficulty in finding a competent medical superintendent, the trustees placed the medical direction of the Sanatorium in the hands of the two visiting physicians from Boston, Dr. Bowditch

and Dr. Clapp, their work being supplemented by two medical assistants at Rutland. This arrangement has been inconvenient and imperfect, becoming more so with the steadily increasing numbers at the hospital.

"The time would seem to have come for a change in the method of management, and for the appointment of a resident specialist in tuberculosis; and the Board strongly urges such a change."

Correspondence.

IMMUNITY AGAINST TUBERCULOSIS.

DORCHESTER, MASS., Jan. 25, 1906.

Mr. Editor: Apropos of the campaign of education on the subject of tuberculosis, a recent valuable book entitled "The Principles of Heredity," by G. Archdall Reid, discusses an aside of the question ordinarily overlooked, in such an attractive way that perhaps it will interest your readers to hear a few extracts. The author first discusses tuberculosis as an evolutionary force, showing that the present day course of evolution is mainly directed against disease, to produce immunity by natural selection. He shows that racial immunity against tuberculosis has been partially secured in the Anglo Saxon; but points out that individual immunity is never secured as the result of an attack. Hence it follows that by fostering those who are susceptible, we perpetuate the disease, by deferring the production of a completely immune race. Though these ideas are by no means new, their exposition is most striking.

"It is universally admitted that men differ greatly in their susceptibility to infection and in their powers of subsequent resistance. If, then, a lethal disease be very prevalent it is evident that it presents a very stringent form of natural selection. In England, for example, hardly anyone escapes measles, whooping-cough, or tuberculosis unless he be immune, or death, unless he be resistant. Selection should cause an evolution of an inborn power of resisting infection, or of an inborn power of recovering from infection. The two qualities are quite distinct, and are generally useful against quite distinct diseases. Tuberculosis should cause an evolution of what we know as inborn immunity, while measles should cause an evolution of something quite distinct, the inborn power of acquiring immunity.

"We habitually speak of the fatal 'climate' of the west coast of Africa, but we are usually unaware that our own 'climate' is nearly as fatal to the native inhabitants of the greater part of the world. The micro-organisms of tuberculosis are unable to persist except under given conditions, which are best satisfied in the crowded, badly-ventilated houses of civilized people, particularly those who dwell in the cities of cold and temperate climates. That the environment is yearly growing more favorable to the bacilli in the world at large cannot be doubted, and this in spite of the greater attention to light and ventilation. Our race, which is able to persist under such adverse conditions, has undergone evolution in regard to tuberculosis, fully equal to the evolution against malaria undergone by the West Africans. It is clear that the individuals of our race are very generally so resistant to tuberculosis that, even after infection, their phagocytes, under slightly improved conditions, are able to wage successful war against the microbes. It is clear, also, that no immunity can be acquired against the disease because those who have recovered may, under worse conditions, take it again. But in the very lands in which the least resistant among us recover from previous infection, tuberculosis is causing extermination of the natives. This one fact throws the greatness of our evolution into startling relief, for the natives usually live under hygienic conditions that are far better as regards the disease than do the settlers. No race is now able to achieve civilization, to dwell in dense communities, unless it has previously undergone evolution against tuberculosis. It is a

highly significant fact that throughout the New World no city has its native quarter, whereas every European settlement in Asia and Africa has its native suburb. The aborigines of the New World are now found only in remote or more or less inaccessible parts. The following is an example of the manner in which tuberculosis went to work; the tribe of Hapua is said to have numbered some four hundred, when the smallpox came and reduced them by one fourth. Six months later a woman developed tubercular consumption, the disease spread like fire along the valley, and in less than a year a man and a woman died from the newly created solitude.

"We see clearly how little the conscious efforts of man have influenced his destiny. We see forces, unrecognized, enormous, irresistible, unchanging, working slowly towards tremendous conclusions, forces so irresistible and unchanging that, watching them, we are able even to forecast something of the future."

The writer's view on the possibility of completely eliminating tuberculosis are significant.

"But in all probability this reduction of mortality from consumption, though it may continue till all slums have quite disappeared, is not permanent. As generations pass, as the race regresses, as the numbers of the night increase through lessened elimination, the task of the sanitary reformer will grow in magnitude and complexity. The disease is difficult to detect in its earlier stages, especially in very resistant sufferers in whom it may exist unsuspected for months or years. Every such person is a focus of infection. We can hardly expect in our climate, and with our social habits and dense population, to render the conditions as unfavorable to the bacilli as they are in tropical Pacific islands, where the natives are becoming extinct. Segregation of consumptives to any degree of completeness is impracticable, not only because of their enormous numbers, and of the difficulty of detecting the disease in its incipient stages, but also because of their long duration of quarantine necessary. Apparently, therefore, our only hope of permanently lessening the prevalence of the disease lies in a reduction of the number of people susceptible to it. In other words, the problem presented by consumption will have to be solved, if ever it be solved, by the student of heredity. Some method will have to be devised to lower the output of children by people predisposed to the complaint, otherwise the mortality from consumption cannot be greatly or permanently reduced. A few states of the American Union have already laws forbidding the marriage of consumptives. It is, however, no part of my present purpose to suggest remedies, for the mere discussion of which the community is not as yet prepared. My principal object is to demonstrate that there are certain practical problems of great importance which cannot be dealt with until the public, and, especially the medical profession, are in a position to bring an adequate knowledge of heredity to bear on them."

Trusting that these extracts will introduce others to this most interesting book.

Sincerely yours,

LAWRENCE W. STONG, M.D.

ROSENBERG'S THEORY OF THE DEVELOPMENT OF THE SPINE.

A CORRECTION.

HARVARD MEDICAL SCHOOL.

Jan. 24, 1906.

Mr. Editor: The following passage occurs in Dr. Bohm's very interesting article which appeared in the *Journal* of Jan. 25: "In the development of the species man out from lower species 'the dum' travels upward on the spine' (Twilight), a loss of vertebrae takes place gradually. From this standpoint human individuals which have six or five and one-half human vertebrae would represent a lower type of human beings. According to this theory our patients would belong to this class and their deformities are of atavistic character."

Dr. Bohm entirely misstates me. I know that I have done unintentionally but in view of my position, which is supported by recent discoveries, I wish to correct the error. In two words the case is this: Rosenberg many

years ago declared that in the early human embryo the dum joins the sacrum further back than in the adult and that during development it moves forward upwards along the spine. If it stops at the twenty-sixth vertebra it is an effect of atavism. If it goes on to the twenty-fourth it is (presumably) a step to the future. This doctrine had a great vogue because it seemed so pretty an illustration of the alleged law that ontogeny repeats phylogeny. Hott and some others denied the facts most accepted then. For my part, not being a practical embryologist, I allowed the theory to pass as a working hypothesis. I showed, however, that even if true this migration of the dum was inadequate to account for certain important changes. Recently, however, Harkness (*Anatomischer Anzeiger*, 194, 1901) has shown that the earliest trace of an illum is opposite the upper part of the lumbar region and that it travels downward. Thus he not only demolishes Rosenberg's theory but all the sham science that has come from it. The quotation which Dr. Bohm gives from my paper on spines is from a part in which I am merely stating Rosenberg's views.

Very truly yours,

THOMAS DWIGHT, M.D.

ERRORS IN THE HARVARD MEDICAL SCHOOL HISTORY.

LOWELL, MASS., Jan. 26, 1906.

Mr. Editor: In your issue of Jan. 25, 1906, Dr. Edward M. Buckingham, in a communication, refers to what he terms "Errors in the Harvard Medical School History," relative to the biography of his father, the late Dr. Charles E. Buckingham. Permit me, through your columns, to state that, difficult as it is for biographers to harmonize varying estimates of individuals, such varying estimates do not constitute errors. If your correspondent had quoted the whole paragraph rather than detached portions, I think impartial judges would conclude that there was nothing stated therein to deserve the implication of error. That the late Dr. Buckingham was a fearless critic and that his criticism was often bitter does not imply that such criticism was animated by "a mean jealousy of others," nor that it was aroused by the "better fortune in others." Here is the whole paragraph from which your correspondent quoted, the italicized words he does not use.

Vol. II, p. 867. "In his early professional career Buckingham was often in sore straits. His means were small and he was without family influence and social connections. These difficulties did not discourage him; on the contrary he was stimulated by necessity to make his own way. The struggle, however, left its scars, and once he had afterwards a better and sometimes a luxurious life, he was often possessed these advantages which he had lacked. As our hero's case was more just than he was, and as those whom he thought had treated him unjustly, he was more ready to debate than he. He often felt that he was an able journalist, that vigorous style, open to criticism, and a forthrightness of expression. He was a man who often exhibited in various forms of criticism, and unmarked double dealing."

In reference to the father and mother's careers, it is an undisputed fact that the death of the Harvard School was due directly to the fact that its leaders to the Harvard School of Harvard Summer School. Many of these men held clinical positions similar to Dr. Buckingham in the House of Industry and such men were selected by the Harvard Medical faculty, for the instruction which the expanding Harvard School required. These appointments were not always satisfactory. The corporation and do not appear at all surprising. Much confusion has resulted from the fact that the date at which a teacher was selected for the Medical Faculty with that at which he was elected to the Harvard School. The distinction is important, as it was not until teachers who served prior to 1870.

Very truly yours,

THOMAS DWIGHT, M.D.

Author, *History of the Harvard Medical School*.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JAN. 20, 1906.

| CITIES. | Population, Estimated for 1906. | Reported deaths in each. | Deaths under five years. | Percentage of deaths from | | | | | | |
|--------------------|---------------------------------|--------------------------|--------------------------|---------------------------|------------------|-----------------------|----------------|----------------------------|---|---|
| | | | | Infectious diseases. | Accute diseases. | Diphtheria and croup. | Typhoid fever. | Cerebro-spinal meningitis. | | |
| New York . . . | 1,544 | 460 | 20.28 | 22.65 | 3.04 | .33 | | .99 | | |
| Chicago . . . | 611 | 168 | 26.63 | 6.71 | 1.47 | .65 | | | | |
| Philadelphia . . . | — | — | — | — | — | — | — | — | — | — |
| St. Louis . . . | — | — | — | — | — | — | — | — | — | — |
| Baltimore . . . | 188 | 60 | 17.62 | 20.74 | 1.06 | .53 | | | | |
| Cleveland . . . | — | — | — | — | — | — | — | — | — | — |
| Buffalo . . . | — | — | — | — | — | — | — | — | — | — |
| Pittsburg . . . | — | — | — | — | — | — | — | — | — | — |
| Cincinnati . . . | — | — | — | — | — | — | — | — | — | — |
| Milwaukee . . . | — | — | — | — | — | — | — | — | — | — |
| Washington . . . | — | — | — | — | — | — | — | — | — | — |
| Providence . . . | — | — | — | — | — | — | — | — | — | — |
| Boston . . . | 692,528 | 243 | 65 | 20.55 | 18.59 | 1.23 | 1.23 | 1.64 | | |
| Worcester . . . | 130,171 | 47 | 10 | 8.51 | 29.79 | — | 2.13 | 2.13 | | |
| Fall River . . . | 105,943 | 25 | 9 | 26.00 | 24.00 | — | — | — | | |
| Cambridge . . . | 88,583 | 33 | 5 | 23.53 | 20.39 | — | 1.94 | 2.94 | | |
| Lowell . . . | 90,889 | 32 | 10 | 12.50 | 15.63 | — | — | — | | |
| Lynn . . . | 78,871 | 19 | 4 | 21.05 | 21.05 | 5.26 | — | 6.26 | | |
| New Bedford . . . | 77,906 | 21 | 8 | 4.76 | 28.57 | — | — | — | | |
| Springfield . . . | 76,079 | 17 | 5 | 11.76 | 11.76 | — | — | — | | |
| Lawrence . . . | 71,693 | 25 | 9 | 12.00 | 36.00 | 8.00 | — | — | | |
| Somerville . . . | 70,308 | 24 | 7 | 8.33 | 12.50 | — | — | 4.17 | | |
| Holyoke . . . | 50,824 | 12 | 6 | — | 33.33 | — | — | — | | |
| Brookline . . . | 49,511 | 11 | 1 | 9.09 | — | — | — | — | | |
| Malden . . . | 39,978 | 8 | 2 | 25.00 | — | — | — | — | | |
| Salem . . . | 37,570 | 18 | 7 | 11.11 | 16.67 | — | — | — | | |
| Chelsea . . . | 37,968 | 9 | 1 | 22.22 | 14.11 | — | — | — | | |
| Haverhill . . . | 37,962 | 7 | 12 | 14.29 | 14.29 | 14.29 | — | — | | |
| Newton . . . | 37,512 | 25 | 8 | 12.50 | 12.50 | — | — | — | | |
| Fitchburg . . . | 33,347 | 8 | — | 12.50 | 25.00 | — | — | — | | |
| Taunton . . . | 30,967 | 13 | 1 | 23.08 | — | — | — | — | | |
| Everett . . . | 30,173 | 3 | 2 | — | — | — | — | — | | |
| Quincy . . . | 27,512 | 7 | 1 | 14.29 | — | — | — | — | | |
| Waltham . . . | 26,881 | 12 | 1 | 25.00 | 16.67 | 8.33 | 8.33 | — | | |
| Gloicester . . . | 26,011 | — | — | — | — | — | — | — | | |
| Pittsfield . . . | 25,704 | 2 | 1 | — | — | — | — | — | | |
| Brookline . . . | 24,207 | — | — | — | — | — | — | — | | |
| North Adams . . . | 22,150 | 7 | 1 | 28.57 | — | 14.29 | — | — | | |
| Chicopee . . . | 20,402 | 6 | 2 | 33.33 | 16.67 | — | — | — | | |
| Northampton . . . | 20,235 | 6 | 0 | — | — | — | — | — | | |
| Medford . . . | 19,988 | 6 | — | — | — | — | — | — | | |
| Beverly . . . | 15,506 | 4 | — | 25.00 | 25.00 | — | — | — | | |
| Hyde Park . . . | 14,777 | 4 | 1 | — | — | — | — | — | | |
| Newburyport . . . | 14,715 | 5 | 0 | 40.00 | — | 20.00 | — | — | | |
| Leominster . . . | 14,712 | — | — | — | — | — | — | — | | |
| Melrose . . . | 14,578 | 2 | — | 50.00 | — | — | — | — | | |
| Woburn . . . | 14,432 | 4 | — | 25.00 | 50.00 | — | — | — | | |
| Marlboro . . . | 14,168 | 2 | — | — | — | — | — | — | | |
| Westfield . . . | 13,987 | 1 | 2 | 25.00 | 25.00 | — | — | — | | |
| Peabody . . . | 13,438 | — | — | — | — | — | — | — | | |
| Revere . . . | 13,168 | 2 | 1 | — | 50.00 | — | — | — | | |
| Clinton . . . | 12,165 | 2 | 1 | — | — | — | — | — | | |
| Attleboro . . . | 12,068 | — | — | — | — | — | — | — | | |
| Adams . . . | 12,775 | — | — | — | — | — | — | — | | |
| Gardner . . . | 12,267 | 4 | 1 | 25.00 | 25.00 | — | — | — | | |
| Milford . . . | 12,256 | — | — | — | — | — | — | — | | |
| Weymouth . . . | 11,638 | 3 | 1 | 33.33 | — | — | — | 33.33 | | |
| Framingham . . . | 11,598 | — | — | — | — | — | — | — | | |
| Watertown . . . | 11,597 | 5 | 1 | — | — | — | — | — | | |
| Plymouth . . . | 11,452 | — | — | — | — | — | — | — | | |
| Southbridge . . . | 11,206 | — | — | — | — | — | — | — | | |
| Wakefield . . . | 10,476 | 3 | — | 66.67 | 33.33 | — | — | — | | |
| Webster . . . | 10,280 | — | — | — | — | — | — | — | | |

* Note as last reported.

Deaths reported, 3,073; under five years of age, 886; principal infectious diseases (smallpox, measles, cerebrospinal meningitis, diphtheria and croup, diarrheal diseases, whooping cough, erysipelas, fevers and consumption), 589; acute lung diseases 568, consumption 323, scarlet fever 17, whooping cough 14, cerebrospinal meningitis 25, smallpox 0, erysipelas 11, puerperal fever 10, measles 25, typhoid fever 17, diarrheal diseases 73, diphtheria and croup 67.

From whooping cough, New York 5, Chicago 1, Baltimore 6, Boston 2. From scarlet fever New York 10, Chicago 6, Boston 1. From cerebrospinal meningitis, New York 15, Boston 4, Worcester 1, Cambridge 1, Lowell 2, Somerville 1, Weymouth 1. From erysipelas, New York 6, Chicago 3. From typhoid fever, New York 5, Chicago 4, Baltimore 1, Boston 5, Worcester 1, Cambridge 1. From measles, New York 17, Chicago 3, Providence 1, Boston 4, Westfield 1. From diphtheria and croup, New York 46, Chicago 9, Baltimore 2, Providence 1, Boston 3, Lawrence 2, Lynn, Haverhill, North Adams and Waltham 1 each.

In the seventy-six great towns of England and Wales, with an estimated population of 15,818,300, for the week ending Jan. 13, 1906, the death-rate was 16.7. Deaths reported 5,652;

acute diseases of respiratory organs (London) 193, whooping-cough 101, diphtheria 66, measles 124, smallpox 0, scarlet fever 42.

The death-rate ranged from 6.1 in Northampton to 25.9 in Burnley; London 17.5, West Ham 14.2, Brighton 19.5, Southampton 15.1, Plymouth 15.0, Bristol 19.1, Birmingham 16.6, Leicester 17.7, Nottingham 18.2, Birkenhead 14.7, Liverpool 21.2, Wigan 17.3, Bolton 13.9, Manchester 17.5, Salford 14.5, Halifax 18.1, Bradford 15.7, Leeds 18.6, Hull 14.3, Sheffield 13.3, Newcastle-on-Tyne 16.5, Cardiff 13.6, Rhondda 13.5, Merthyr Tydfil 24.3, Walthamston 10.3.

METEOROLOGICAL RECORD.

For the week ending Jan. 20, in Boston, according to observations furnished by Sergeant J. W. Smith of the United States Signal Corps:

| DATE. | Barometer. | Thermometer. | Relative humidity. | | Direction of wind. | | Velocity of wind. | | Wet'r | | Rainfall in inches. |
|-------------|-------------|--------------|--------------------|-----------|--------------------|----|-------------------|----|-------|----|---------------------|
| | Daily mean. | Daily mean. | Maximum. | Minimum. | | | | | • | | |
| | 8.00 A.M. | 8.00 P.M. | 8.00 A.M. | 8.00 P.M. | | | | | | | |
| | 8.00 A.M. | 8.00 P.M. | 8.00 A.M. | 8.00 P.M. | | | | | | | |
| S. 14 30.18 | 31 | 37 | 25 | 86 | N | E | 30 | 20 | S. | C. | .49 |
| M. 15 30.26 | 31 | 38 | 24 | 68 | 80 | 71 | N | E | 4 | 10 | O. |
| T. 16 29.61 | 42 | 52 | 33 | 74 | 85 | 80 | S | W | 15 | 10 | R. O. 1.05 |
| W. 17 29.82 | 37 | 42 | 37 | 72 | 74 | 74 | S | W | 15 | 10 | F. C. |
| T. 18 29.78 | 38 | 44 | 31 | 80 | 83 | 82 | S | W | 9 | 12 | S. C. .07 |
| F. 19 30.18 | 32 | 27 | 85 | 44 | 64 | 64 | N | N | 10 | 7 | C. O. |
| S. 20 30.30 | 35 | 46 | 24 | 78 | 88 | 88 | E | S | 2 | 10 | O. O. T. |
| 30.02 | 42 | 28 | 78 | | | | | | | | 1.31 |

* D., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow; X., below zero. † indicates trace of rainfall. *eg*—Means for the week.

SOCIETY NOTICES.

THE BOSTON CITY HOSPITAL ALUMNI ASSOCIATION.—The Association will hold its annual meeting at Hotel Tueries, 270 Commonwealth Avenue, between Fairfield and Gloucester streets, on Wednesday evening, Feb. 7, at 6.30 o'clock. Dinner will be served at 7 o'clock immediately after the business meeting. Dr. Charles H. Williams will preside.

WILLIAM H. ROBEY, JR., M.D., *Secretary.*

HARVEY SOCIETY LECTURE.—The seventh lecture in the Harvey Society course will be delivered by Prof. Frederick S. Lee, of Columbia University, at the New York Academy of Medicine, on Saturday, Feb. 3, at 8.30 p.m. Subject, "Fatigue."

GEORGE B. WALLACE, *Secretary.*

APPOINTMENT.

DR. DAVID CHEEVER has been appointed third assistant visiting surgeon at the Boston City Hospital.

RECENT DEATHS.

DR. WILLIAM B. NEFFEL, of New York, died on Jan. 20. He was born in Russia in 1830 and was graduated from the University of St. Petersburg in 1852. During the Crimean campaign he served as surgeon to the Russian Imperial Guards. In 1865 he removed to New York, where he devoted himself more particularly to neurology and was one of the pioneers in electro-therapeutics. Dr. Neffel's wife, who survives him, was the Princess Nadine of Georgia, a granddaughter of the late King George XIII.

DR. THEOPHILUS CARTER, of Mount Vernon, Westchester County, N. Y., a specialist in nervous diseases, died on Jan. 23, at the age of forty years. He was a graduate of the Yale medical school and settled in Mount Vernon twelve years ago. About three years ago he was obliged to retire from practice on account of ill health.

BOOKS AND PAMPHLETS RECEIVED.

Department of the Interior. Bureau of Government Laboratories. Chemical Laboratory. 1. Autoanalytical Decomposition of Silver Oxide. II. Hydration in Solution. By Gilbert N. Lewis, Ph.D. Manila, 1905.

Department of the Interior. Bureau of Government Laboratories. I. The Polypodiaceae of the Philippine Islands. II. New Species of Edible Philippine Fungi. By Edwin Bingham Copeland, Ph.D. Manila, 1905.

Address.

THE PROBLEM OF PSYCHIATRY IN THE FUNCTIONAL PSYCHOSES.

BY EDWARD COWLES, M.D., BOSTON.

(Continued from No. 5, p. 121.)

THE RELATION OF PATHOLOGY TO OTHER BIOLOGICAL SCIENCES, ESPECIALLY TO PHYSIOLOGY.

PHYSIOLOGY, when it declared itself an independent science by breaking away from medicine and establishing its place in the great realm of biology, entered upon a broader field of study of the functional side of life with its complex phenomena in the functions of all living matter. To morphology, as an equally independent science, belongs the study of the structure and form of living matter; it covers the whole field of anatomy in the special forms of zoology and botany. But physiology and morphology, which are closely woven together, are both built upon the foundation of the inorganic elements of inanimate matter with its controlling laws of physics and chemistry that govern the forces of inanimate phenomena. All these forces of animate and inanimate nature are bound together; from a biological point of view we do not know living matter without both form and function.

On the part of the physician the inquiry at this point is as to the true relations of pathology to the other biological sciences in medicine. The scientific foundation of pathology, the development of its work in the other sciences which it necessarily involves, support its claim to an equal place in biology with the other natural sciences.

Professor Orth, in an address at Kassel in 1903, described pathology as consisting of two branches, anatomy and physiology. Although the great Virchow remained a pure pathological anatomist, he contemplated the beginning of pathological physiology as the culmination of his endeavors. "one of his favorite themes was the establishment of pathological physiology, a subject which, to his mind, was the foundation of scientific medicine, and therefore of medicine as a whole." Practical medicine, according to Virchow, is co-extensive with pathological physiology; this is founded on pathological anatomy, clinical observations, experimental researches; its problem is the determination and investigation of bodily processes under abnormal conditions, of illness and its symptoms. Virchow's experimental investigations to clear up morphological characteristics of disease go only to the beginning, and Professor Orth urged that better attention should be given to physiological methods for the determination and interpretation of functional disorders in the unhealthy organ, yet pathological morphology must remain the unchangeable groundwork of all medical knowledge and thought, its most important function is its purpose for the upbuilding of pathological physiology, for the understanding of the living processes and their disturbances in the sick body.

Bacteriology in its marvellous progress leads

investigation directly into the field of pathological physiology, and finds explanations in the normal physical and chemical reactions that belong to the normal cell physiology. Pathology, taking bacteriology into its special province, is engaged in the study of problems relating to the nature of disease. General physiology has shown that the physico-chemical reactions in living substances are fundamental and essential factors in the production of vital phenomena; it finds, in its investigation of the component elements of cell-substance, that in physiological chemistry is its chief aid in the explanation of vital activity and its disorders. Hertel⁹ reviews our present knowledge of the chemical defences of the organism against disease; it serves to emphasize the varied chemical activities of the cells, and to render more intelligible the phenomena of diseases that result from modifications of failure of these cellular functions. He says: "Modern pathology has made us familiar with the conception that disease is generally the expression of a reaction on the part of the cell to injurious influences. The only rational conception of the ability of the human body to defend itself against disease by means of chemical agencies is that these defences ultimately reside in the cells themselves. Many of the phenomena of disease are caused by the modification of function that occurs during the action of the cell in resisting injurious influences." Ernst¹⁰ has shown that, notwithstanding the great obscurity of the subject and the somewhat conflicting theories, the point is maintained that in all reactions the cell activity intervenes at some stage of the production of immunity, and that most probably the reactions that occur are closely related to these that go on under the ordinary conditions of tissue metabolism. These considerations are consistent with the fundamental doctrine of cell physiology and pathology.

It appears from a brief survey of the history of pathology that when at first it was a part of anatomy, it was then pre-eminently morphological, and that this characteristic motive still prevails to a large degree. After it became independent, pathology concerned itself especially with deviations from the normal anatomical standard. It developed new relations with the other biological sciences as they attained existence, and like morphological problems arose in connection with them. There was mutual receiving and giving of aid, but anatomy was the parent science and the study of the concrete facts of structure being easier than ever-changing function, morphological conceptions have always kept in advance and pathology has held them to be essential in giving finality to its explanations and proofs. But with the slowing of progress in normal and pathological histology has approached the frontiers of present attainable knowledge in the speculative theories of structure in the endeavor to prove, apparently, an essential natural realities of structure by reference to the facts of physiological activity. The latter and

⁹ Hertel, C. A. "Chemical Pathology," 1905.¹⁰ Ernst, H. C. "Modern Theories of Bacterial Immunity," 1903.

pathology reveals evidence in support of the conclusion that, from the beginning, the science of pathology has needed first the data of normal form and function in order to study their deviations; also pathology has been steadily tending to the finding of its ultimate dependence upon physiology. Aside from the results called disease from actual traumatism of cell bodies caused by extrinsic agencies, there must be many transient conditions of intracellular rearrangements or molecular disorder, beginning with functional and defensive reactions, long before there can be any ascertainable structural findings. Such molecular changes, beyond the ken of the microscopist, might be assumed to be structural in fact; but the ultimate problem of the search for explaining principles thus tends to become a physico-chemical one. The facts of cell functions should hold an important place in the study of the varying agencies and influences of cell stimulation in the production of symptoms. The relation to physiology of the morphological side of pathology is especially instructive.

THE RELATION OF MORPHOLOGY, NORMAL AND PATHOLOGICAL, TO PHYSIOLOGY.

Morphology presents considerations of the highest importance, which require special notice in this examination of the mutual relations of the biological sciences. It is granted that pathology, on the morphological side, is inconceivable without normal anatomy as its basis. Pathological anatomy, being dependent on normal anatomy, belongs to the science of morphology. This science, with its great subdivision of embryology, has attained splendid achievements; in the course of its advancement in many specialized lines of investigation in plant and animal life, it has enjoyed the advantage of being able to study the problems of evolution and development in many quickly succeeding generations of vital forms. The scope of its observations has extended farther than from the point of view of medicine, and is reaching conclusions that may yet illuminate some of the dark places of psychiatry. The history of morphology has a special significance in its development cotemporary with other biological sciences; the changes in its course suggest a law of progress in scientific research that has operated in other fields. After the emergence of morphology and of physiology from the keeping of anatomy, the two new sciences entered upon equal domains in the realm of biology. Morphology asserted the independence of the science of form and structure from that of function; the doctrine was that form persists and function varies. It was characterized by the conception of a fixity of types, a rigid adherence to the study of mature forms which it labored to arrange in a perfected and systematic classification. With the breaking away from these rigid conceptions, during the last fifty years, the course of progress was in the study of the problems of evolution; leading through the investigations concerning the origin of species, it

has come to the recognition of the supreme importance of the problems involved in the development of the individual and of the biological laws that govern it and the wide range of variations that may be produced in members of a given species. So in medicine, instead of clinical types, the differentiations of disease are becoming genetic and developmental in character.

In the morphology of plant and animal life it is agreed on both sides that they are subject to the same laws; in both plants and animals there are identical processes which are consistent with the significance of the cell-doctrine as being fundamental to morphology. In the close relation of form and function the modern conception is that the structural characters of which an individual organism is made up correspond to its functional characters; form characteristics cannot be understood without considering the function characteristics. Physiological characteristics are transmissible in the same way as the morphological. The study of physiological cytology and embryology is revealing the mechanism of the transmission of qualities; with the aid of the experimental methods in the production of variations in both form and function there is great progress in the understanding of the laws of descent and inheritance. The close relation of physiological and morphological characteristics proves that the problems of form and structure are also physiological problems. Physiological processes are influenced and often controlled by the conditions of the environment, both internal and external, and it is held that mental as well as physiological characteristics are inherited under the same laws. These brief references to the data of morphology serve here to indicate the trend of progress in this science; it points to the conclusion that influences which stimulate functional activity play an essential part in determining the processes of development and the resulting structural forms. The demonstrations of the dominance of the sensory over the motor side of the nervous mechanism is consistent with the fact that all movements are primarily a response to sensory impressions and are performed under their guidance. It follows from the teachings of Hughlings Jackson that cell-groups are thus formed by a process of education. All motor phenomena being responsive reactions to stimuli applied to the neuro-muscular mechanisms, the laws of use and habit influence functional activity and growth. The unity of all these sciences is also shown. Physiology and morphology have to do with interdependent manifestations of organic existence; there can be no disease until there is first normal life with whose physical sequelae pathology has to deal. Inasmuch as the whole science of pathology must refer all its material to normal standards, both on the functional and the morphological side, a like freedom belongs to the minor province of mental pathology; psychiatry is at least justified in seeking directly its immediate explanations in the hopeful, though neglected, field of function.

THE PATHOLOGICAL CONCEPTIONS OF PSYCHIATRY STATED IN TERMS IMPLYING MORPHOLOGICAL IDEAS.

In such a survey as this, of so complex a subject, certain difficulties have appeared concerning special aspects of current effort in the field of the psychiatrist's labors. Allusion has been made to the remarkable fact of the disharmony between mental physiology and mental pathology. There are signs of the coming of better co-operation, but so far the general fact is that the psychiatrist borrows from psychology what seems fitting with his pathological conceptions, and applies some of its psycho-physical methods; at the same time he hesitates to use the data and even the terminology offered by expert investigators in mental physiology. The importance of care in the use of descriptive words has been mentioned; an inquiry like this draws special attention to this subject and some extraordinary facts are revealed that should receive further notice.

First among these may be mentioned the use of the word "physiological"; its frequent infelicitous employment by both pathologists and psychologists themselves emphasizes the width and depth of the traditional gulf between mind and body. The distinction is commonly made between *psychical* phenomena and *physiological* phenomena, and the designations "mental side" and "physiological side" are used to make the same contrast. Mental phenomena are themselves physiological, but the usage implies a distinct psychical element as an extra-physiological epiphenomenon, when such a meaning is not intended and is therefore misleading. The mind event and the brain event are both physiological.

More remarkable examples of doubtful usage, universal in medical literature, and with far-reaching effects, are shown in the words "disease-form," "disease-entity," "disease-process" and "pathological process," which have already been mentioned. These words still suggest old meanings now wholly obsolete; this is so obvious that when thoughtful writers use such words for "convenience," the explanation is not infrequently made that it is not intended to imply that disease is a malign entity which invades the living body and works its evil course. Yet, as usage sanctions it, writers continue to employ the framework of words which would once have expressed the ancient parasitic personification of disease. While, in the science of pathology, this extreme conception is corrected by explanation, such words in their modern usage still embody and positively convey the sense of an underlying morphological counterpart of the symptom-complex that runs its course of progressive degeneration as a disease and reveals the terminal changes in post-mortem findings. To speak of all disease in terms used in these senses is to emphasize structural conceptions of pathology, and thus to impede the progress of the reform which is clearly seeking to give adequate attention to functional conceptions in place of the dominating demand for mature types and forms and classifications.

It would be interesting to follow out the history of the usage of these verbal embodiments of whole theories. Perhaps a reference to main points will be enough to indicate the purport of these statements. First, as to the nature of disease, it cannot be correctly conceived as a state of disordered activity or disorder of a process in an *active* sense; there is a condition produced by a defensive contest between the forces of the living cell and the harmful agencies; it is not a state of perturbed activity, but the result of it in diseased organs or tissues. The causes of disease are extraneous and unnecessary to cell life, which can exist without disease. The only true *process* in living organisms is the physiological or life process; the forces that cause the reactions called vital phenomena are inherent and are governed by the uniform laws of an invariable order of nature; like effects result from like causes and conditions, and the life process presents the attributes of uniformity and continuity controlled by the laws of descent. Reproduction is an original property of living matter and life is continuous, and death is not due to such a property; this is a proposition in which there would be a general agreement with Weissmann. Roger¹¹ reduces the conception of death to the formula: "Death is the result of an arrest of cellular nutrition; whatever the multiple proceedings are that are called into play, the final result is always the same."

A "disease-process" or "pathological process" cannot be conceived as comparable with the physiological process; the causes of disease being extraneous to normal cell life, are accidental, multiple, discontinuous, without uniformity. It is consistent with this, that even in the problem of tumor growths there are some essential explaining facts; whatever of the various theories may be employed to account for them, they are not indwelling entities, but depend for their existence upon the inherent vitality of the parent organism, acting under abnormal conditions. When the organism dies, new growth dies, there can be no disease without prior normal life.

When applied to functional disorders, the assumption of a necessary correlation between a "disease-form" and an underlying structural "disease-process" goes beyond the province of morphological pathology; it involves the intracellular changes of physiological chemistry. It is obstructive of a true conception of the wide variations of function that belongs to molecular nutritive and metabolic changes due to variations in condition, irritability, intensity of stimuli, etc., though affecting the same physico-chemical operations by the same agencies. But an authoritative insistence upon the "disease-form" and "disease-process" ideas, with respect to all psychoses, has undoubtedly tended to distract attention from a free consideration of the natural conceptions of mental pathology. These and kindred forms of words, with their distinctly morphological stamp, show the characteristic of

¹¹ Roger, G. H. Introduction to the Study of Medicine. Trans. 1901.

degree, of changing conceptions of pathology. They are kept in use by their convenience; and they appear to be in harmony with certain accepted theories and doctrines concerning the nature of disease and death and their relation to life. The influence of these doctrines is so great as to require examination here.

The difficulty of determining a sharp limit between life and death has been stated by Verworn¹²; there is no definite time at which life ceases and death begins in a complex organism, for one set of cell complexes may survive another for a long time; but "there is a gradual passage from normal life to complete death which frequently begins to be noticeable during the course of a disease. Death is developed out of life." "Thus death does not come to the cell immediately, but is the end-result of a long series of processes which begin with an irreparable injury to the normal body, and lead by degrees to a complete cessation of all vital phenomena." It is reasoned that "life and death are only the two end-results of a long series of changes which run their course successively in the organism"; also that "death undergoes a development; normal life upon the one hand and death upon the other are merely the remote end-stages in this development, and are united to one another by an uninterrupted series of intermediate degrees." This transition from life to death is termed *necrobiosis*, a word introduced into pathology by Virchow and Schultz; it is understood to mean, according to Verworn, "those processes that, beginning with an incurable lesion of the normal life, lead slowly or rapidly to unavoidable death."

Thus the principle of necrobiosis is to be studied in the cell as well as its vital phenomena; and it is held to apply also to the death of compound organisms. By an extension of this conception it explains the condition of natural death in old age, which thus appears to be physiological. Senile atrophy, which leads finally to death from the feebleness of old age, is to be regarded as simply the end-result of a long developmental series; death in old age is the natural end of an unbroken development and its causes exist in the living organism itself. Life itself never becomes extinct, but there is a continuity in its descent; yet living substance itself, in the form of bodies, is continually dying.

Compare with the foregoing the views presented by Gowers¹³ in regard to "diseases from defect of life" to which he gives the designation "abiotrophy" to distinguish a newly differentiated clinical group of conditions and symptoms; he acknowledges Mott's cotemporary recognition of these conditions. The conception is that of "a degeneration or decay in consequence of a defect of vital endurance"; it indicates a failure of life-processes due to defective vitality which seems to be inherent. It is recognized that many degenerative diseases of the nervous system are a result of such defect. The idea is expressed by

Mott¹⁴: "The neurones of a particular system die prematurely, owing to an inherited or acquired want of durability, and the regressive process of decay may be looked upon as a nutritional failure on the part of the same cells to maintain that metabolic equilibrium essential and correlative to functional activity." Every nerve cell of the human body is conceived to be "endowed with a specific durability whereby in the health-perfect organism every neurone possesses an equally adjusted vital energy." This is a statement of one of the two ways in which the regressive process occurs, the other being "the metamorphosis incidental to old age manifested by a gradual and general enfeeblement of the functions of the whole nervous system." "In contradistinction to this normal senile decay are the premature pathological processes of decay attacking groups, systems, or communities of neurones subserving special functions." "The process may be regarded as the inverse of development"; in harmony with these views Hughlings Jackson is quoted in regard to the helpfulness of considering diseases of the nervous system "as reversals of evolution, that is, as dissolution." Mott conceives that the process of primary degeneration is, morphologically, an evolutionary reversal commencing in the structures latest developed.

In the extensive literature concerning the life-processes and their failure in disease and senility, other diverging views may be cited, but the purpose here is only to indicate certain ideas and reasonings that bear upon the pathological conceptions with which psychiatry has had to labor. With respect to physiological old age ending in natural death the contending view is that the decline of life manifests the summation of the effects of external injuries, the damage of wear and waste, and is not something different and apart from disease. It is to be noted in the doctrine of necrobiosis that the idea of a "disease-entirety," with its course and process parallel and antagonistic to the life process, is avoided by conceiving life or the life-principle as the sole producer of two series of developmental processes, one of which leads to its end-result in the existence of normal being; this life-process is then conceived as turning against itself in another process of producing a series of decrements that reaches to the end-result of non-existence. One result must exclude the other, and we admit that death is the common goal; the life of every living thing ends in death and there is only one end-result, — death is developed out of life. But by shifting the position to the larger view, the attempt is to set up a dual conception of two processes, equal, parallel, antagonistic, yet conjoined. The truth is that the whole of life comprehends all living nature; the individual parts that bloom, fructify, and perish, and the fragments chipped and sloughed off from the great embodiment of life in matter, are always dying or dead, but the one chief process of life goes on, and we say that life is developed out of death.

¹² Verworn, M.: General Physiology. Trans., 1899.

¹³ Gowers, W. R.: Abiotrophy. Lancet, 1902.

¹⁴ Mott, F. W.: The Degeneration of the Neurones. Croonian Lectures, 1900.

The minor casualties of injury and disease represent the chance encounters of living substance, in its struggle for existence, with the discontinuous opposing forces of the world of living and material things. Living substance dies, but life is immortal. We may describe, in such figures of speech, the dual developmental processes with their contrasting end-results.

The paradox of the "processes" appears also in the application of the doctrine of biotrophy which, of itself, helps to make clearer the terms of the problem by the conception of a failure of nutritional energy with a consequent limitation of the durability of the organism and of the length of life. In applying this doctrine to certain pathological changes it is said that the overgrowth of interstitial neuroglial tissue, when the nerve elements decay, is in consequence of the fact that the two elements have "a common but inverse vitality"; when the nutritional energy fails to maintain the growth of both the more highly specialized tissue ceases to live, while the less specialized tends to overgrow with the tendency of the former to decay. It is explained that these "tendencies are in the opposite direction, but they seem to be coincident results of the same vital condition."

In the many well-known conditions of constitutional weakness and instability, it is easy to understand the nutritional failure to develop normal growth and efficiency of function, or to maintain them, and the consequent recession of the developmental processes, even to the cessation of life. The doctrine of dissolution as characterizing the many conditions of such recessions is clearly consistent. When biological conceptions are invoked, it is also easy to comprehend the general principles of development whereby, through physiological reactions of the organism, there are adaptations and modifications of characters due to changes of environment and favorable to life and health; it is intelligible that through use higher types of characters may be produced, or through disuse recessions to more primitive types, under the causative influences of the environment, and all this may be within the physiological limits of the organism as expressions of the processes of life. In the domain of biology it is, no doubt, helpful for descriptive purposes to conceive of the developmental forces as acting in an inverse direction, producing the effects of reversals and regressions. But when this latter conception is applied to pathological conditions, it is in harmony with our prevailing modes of thought in medicine that there is conceived to be an attack, as of some harmful agency, upon the living organism; a pathological process of degeneration is supposed to ensue which is a regressive process of decay, and this implies its active going backward against the normal tendency of the nutritional energy to maintain life and growth. As a further explaining principle the conditions of acquired or inherited defect are conceived, and a process of degeneration of which "heredity" is the motive force; thus the evolutionary and developmental forces turn against

themselves, and working in the inverse direction, produce decay. Here is seen the all-pervading disposition to seek an immediate cause for every effect, and it is easy to describe agencies and processes. When the stamp of "degeneracy" is fixed upon a fated organism we commonly think of its possessor as a "degenerate" descending to inevitable doom.

Is it not evident that there is a misleading ambiguity in the prevailing usage of the conception of "processes"? It is necessary to the notion of a process that there is a passing over of one set of phenomena into another, and this constitutes a change.¹⁵ A "process" is constituted of a series of such changes when one stage or aspect of the process necessarily succeeds upon another. The action of a causative force or stimulus is essential to the change as in the biological processes. The requirements of the conception of two coincident processes appear in the principle of the psycho-physical parallelism in the relation of mind and body. It being the general fact that certain changes in those brain and nerve processes with which consciousness is associated are always accompanied by changes in consciousness, and the converse being true also, then certain other scientific principles are involved: (1) The principle of *equal continuity*, with no breaks in either series of changes, — if one series is continuous, the other must be continuous also; (2) the principle of *uniformity*, — when certain phenomena in each series in brain-process and conscious state are essentially associated, then the concomitance of those terms may be looked for on all other occasions; (3) the principle must be a *universal* one, — whenever we find a series of phenomena in either of the parallel trains of events the principle of parallelism has its application. Structure and function must exist before there can be any disease; the phenomena of life represent the supreme process in animate nature; the phenomena of disease and degenerations appear as the results of discontinuous interferences with the life-processes in which "normal function is acting under abnormal conditions"; the assumption of a "disease-process," or of a "pathological process" in the same sense, fails to meet the essential requirements of a "process," — it is certainly not comparable with the life-process. If we must speak, for convenience, of "pathological process" and "degenerative process," the terms should be used only in a very narrow sense of comparatively transient interferences, or in the sense of referring to normal function acting pathologically.¹⁶

To the inquiring mind the contradictory presentation of these matters is confusing and creates difficulty. The subjects are, in their nature, complex, and our knowledge is limited, but much ambiguity is undoubtedly due to the lack of precision in the statement of the terms of the

¹⁵ Baldwin, J. M. Development and Evolution, 1902.

¹⁶ The writer's views of the inadequacy and misleading influence of the "disease process" conception as a question in psychiatry, was first presented to the American Medical Psychology Association at its meeting in Washington in 1902 in a paper on the principles of mental pathology and the nature of mental symptoms.

problems. One of the most common obstacles to clear thinking appears to arise out of the fact that for every predicate implying action we have to think of an actor or causative agency, and our minds habitually conceive of some form of personification of such an agent as possessing motor and motive attributes. Thus we think of life and death, and artists picture them, in human forms; we are prone to dualistic conceptions and the mind delights in such paradoxical phrases as, there can be no death without life; no disease without health; no evil without good. The use of the active predicate abbreviates expression, and enlivens speech. Professor Sanford,¹⁷ discussing the influence of physics on psychology, notes the fact that, as the result of man's long primitive practice, his habits of thought are objective, and the language he uses is saturated with physical connotations and metaphors. It is not easy for even the best of us, he says, to keep clear of this inveterate physical-mindedness and the subtle suggestions of language; we help out our thinking by material figures and feel a sort of dumb compulsion to make our psychological theories accord with physical requirements. Ebbinghaus is quoted as describing the older psychology as distinctly "mechanistic," many analogies from familiar material processes being used in the exposition of mental phenomena. In regard to essentials, Professor Sanford thinks it may be said that psychology has outgrown this method. But, turning to our own field of the medical sciences, the ruling tendency of our thought and language leads to the conceptions of "disease" and "process," for example, in terms implying immediate causative agents. The familiar conceptions of a process of anabolism and a contending process of katabolism in the cell are treated as the analogues of the life-process and death-process. The analogy is extended to include in this conception the fact that in the whole compound organism the anabolic processes overbalance the katabolic till middle life, when the two processes are more nearly in equilibrium, and that thereafter katabolism predominates more and more in the normal decline of old age. It is held that in the broadest sense the process of senescence begins with the beginning of life in a progressive diminution of the power of growth; and with the progressive waning of the vital powers the leading somatic changes accompanying old age are atrophic and degenerative. The same conception concerning the anabolic and katabolic processes is equally legitimate concerning the idea that an inherent tendency to degeneration is transmissible; the inherited constitutional weakness and diminution of vitality may be interpreted as belonging to the series of changes which imply a process of dying continuing through several generations.

There appears, through all these reasonings, the prevailing method of thinking in terms of "processes." The inquirer is moved to ask whether the normal processes of anabolism and katabolism

are not both essential to the maintenance of a health-perfect cell and both, therefore, parts of the normal life-process. We do not think of the most healthily active cell as one most vigorously dying. If we consider the physicochemical changes in the cell inclusively as a process of metabolism, it is consistent to think of the normal building up and breaking down of complex compounds in growth, work and repair as harmonious, and not antagonistic, operations. Hering separates assimilation as only a qualitative chemical change from growth as quantitative, and in like manner dissimilation from atrophy. As to the transformations in the cells and the overwhelming number of substances excreted from them, little is known of the processes by which these are derived; but many products are formed in both the ascending and descending portions of the metabolic series. Disordered and imperfect adjustments of the molecular arrangements of living substance may affect and arrest both anabolism and katabolism; defect of the latter and not its predominance can be conceived as a cause of the death of the cell.

In physiological theory the distinction is made between death of the tissues and somatic death; in the former, it is reasoned that constantly throughout life the molecules of living matter are being disintegrated and whole cells die and are cast away,—and that life and death are concomitant; in the latter, death occurs when one or more of the organic functions is so disturbed that the harmonious exercise of all the functions becomes impossible. This distinction has been referred to, and further inquiries are suggested here. In respect to the death of the tissues, the "unit cell" being an organism of high complexity as to its structure and function, and its life-process, is not failure of this life-process of the co-operative adjustments within the cell truly analogous to the failure of life, or somatic death, in the whole compound organism? In this connection the question again arises as to the concomitance of the processes of life and death,—the latter being theoretically analogous to the constant disintegration of living matter. Hering's idea that assimilation and dissimilation are distinctly separate from growth and atrophy permits the former to be regarded as one intimately combined and normal metabolic process in a working cell, having no theoretical significance except as wholly contributing to the maintenance of the function of a health-perfect cell. The daily shrinkage of the working and fatigued cell may be regularly made up by rest and nutrition; this is not atrophy, either simple or degenerative, for the continuity of cell-life may be unimpaired and only the labile molecular inclusions be changed by normal use which promotes the health of the cell. On the other hand, the function of growth, being of a more primitive type, would appear to contain the explaining principle of the life-process as contrasted with the work-process. Consistent with this appears to be the sharp differentiation made by Adam between cells which have the habit of growth and

¹⁷ Sanford, E. C.: *Psychology and Physics*, The Psych. Rev., vol. x, 1903

those which have the habit of work; these two functions cannot be exercised by the same cell at the same time, and a normal working cell may revert to the type of a vegetative cell. This implies that cells of the primitive type having only the function of growth, their "work" (in the common usage of the word) is without external manifestations of energy; but that the function of work, which is the power to store potential energy within and to produce kinetic energy in external work, belongs to the highly specialized cell as an acquired character which it may lose. This being true we may understand that assimilation and dissimilation, in the limited sense employed by Hering, constitute a special kind of inclusive metabolic process different from the molecular changes, perhaps less complex, productive only of growth. It is not conclusive that katabolism typically represents destruction of life though it means changes of substance in which life exists. These considerations suggest questions that are not in harmony with the generally accepted theory of life and death as concomitant processes based upon an assumed analogy to the physiological processes of the healthy, living cell.

This inquiry is intended only to consider some examples of current theories with the question whether they can be resolved into more simple conceptions. The life-process being conceived as the one supreme "process" in living organisms, this implies its maintenance by causative forces; assuming each individual to be endowed with a given vital durability, determined by antecedent conditions and subject to modifications due to favoring or adverse influences, the life-process reaches its possible attainments and finally fails in the struggle for existence. Injury, interference with normal function, overuse and disuse, disease and the causes of the changes of senility present alike adverse influences which the organism fails to overcome. We must speak of disease and use its meaning as referring to results in diseased parts, organs or tissues; and we may commonly think of the word as implying a combination of disorders of functional activities which may or may not be associated with ascertainable structural changes. But it should be remembered that we are thinking of a patient and not a "disease." There is no disease-process; no enervative forces exist in nature that induce and carry on processes of degeneration and decay; gradual failure is the summation of the failures of community work due to the complexity of the organism, each organ being subject to the harmful influences of the functional failure of other members of the community. There may be deterioration of function, and degeneration of structure in the sense of failure to maintain it; there may be also regressions or rather recessions of results, but no active pathological "process" of going backward in the structural reductions called "degenerative." These considerations do not support the idea of a "physiological old age" based upon the conception of a normal process of degeneration or decay as though the results of

senile conditions in structural changes are different from disease. This doctrine of natural decay and death makes great trouble in dealing with senile conditions in medico-legal cases; and in like cases concerning degeneracy, in earlier life the most contradictory and confusing notions prevail. They are not in harmony with practical experience. This is largely due to the adoption in psychiatry of generalizations in regard to heredity not yet warranted by the science of biology. The morphological ideas in the prevailing pathological conceptions, and the descriptive terms employed, have undoubtedly obstructed the progress of psychiatry. From all such preconceptions the psychiatrist should be wholly emancipated.

A functional conception of pathology is not in conflict with a pathological conception in the sense of the long-used distinction between functional and organic diseases. The objection to this is not lessened, but the fault is not with function. Life and the science of physiology are first; function and all that pertains to it are primary facts of the activities of normal life. Much disharmony in the conceptions of pathology has been due to the setting up of ideas of "organic diseases" as the chief factors in pathology, and the minimizing of function as worthy of serious scientific consideration. Our conceptions of function are uncomplicated as relating simply to the modes of action of the several parts of the organism; but we must think of organic disease in two ways, of changes of structure in results and of changes of action in "process." The functional factors are necessary to organic disease, and their distinction and true relation should be discovered in their combination. The organic changes of disease are the sequels of interferences with the prime process of normal life.

PHYSIOLOGY AND ITS RELATION TO PSYCHOLOGY.

Physiology acknowledges its debt to Johannes Müller, who mastered the two great sciences, morphology and physiology, and was a teacher of pathology. He took an active interest in psychology, regarding physiology by empirical methods as essential to advancement. After Müller's death, nearly fifty years ago, the fields of his scientific work were divided by the specializations through which the present marvelous advancement has been gained. Physiological chemistry became independent of physiology; and physiological psychology developed on the lines of psycho-physical experiment. It was then that mental physiology should have made its union with mental pathology. It is easy to see that psychologists tried to accomplish this by its attempts to find a morphological basis for its investigations through the experimental method, but the field for this was limited. Psychiatry, under like limitations, by its morphological attitude met the invitations of psychology with inherited distrust of a functional pathology. Psychology was turned upon itself, and also, much of its own choice, sought and found open ways back into the attractive regions of the in-

vestigation of psychical function and philosophy. The later phase of psychiatric interest in experimentation has been mentioned, and is full of promise, but such movements require years of time. The method of exhaustive study of the clinical expression of psychical reactions through speech and behavior, and the use of experimental tests which bring out individual characteristics and their variations, are gaining a share, which must increase, of the attention and interest heretofore centered in the pathological laboratory. This is a new and definite revelation of a tendency toward the study of a functional conception of pathology in psychiatry.

Psychology is still kept apart, however, from the practical study of mental pathology; this is probably, in part, its own fault: although some students of psychology have shown the requisite interest, there is a lamentable want of opportunity. What would really be the most promising interest in psychiatry should be found in the establishment, in hospitals for the insane, of true experimental psychology, with physiological methods applied clinically, according to the principle of using instruments of precision in other clinical work.¹⁸ The observer of these clinical manifestations, trained both as a psychologist and physiologist, would find many new variations of phenomena not seen in the normal subject. A hospital for the treatment of mental disorders is a laboratory of itself where nature makes experiments in the excitation, suppression and combination of naturally correlated psychical and physical reactions, giving many clearer displays of their nature, both by their intensification and absence.

Mental diseases are peculiarly and essentially constituted of mental symptoms; the study of their phenomena must refer them to mental physiology, for the laws governing vital phenomena under abnormal conditions are not different from those of normal life. The study of mental physiology under pathological conditions should be helpful for both psychology and psychiatry.

This inquiry being assumed to be free from all preconceptions as the true nature and place of mental pathology, and as to forms and names of mental diseases, it may be turned to an examination of the relations of psychology, or mental physiology, to all of the associated reactions of the physical organism. This is the necessary basis of pathological physiology for psychiatry. Approaching the subject newly from this point of view the physician should seek to inform himself concerning at least the immediate facts of mental function and the accepted postulates of psychology. But in preparation for such a study it should be recognized that mental physiology is included in general physiology as concerning a

part of the vital activities of the living organism; also that certain general modes of action in the body always have a part in mental function. Some of the symptom-factors of mental disorder have their genesis in conditions that affect primarily other parts of the organism than the brain. General physiology therefore claims the attention of the psychiatrist to certain essential principles whose importance can only be indicated here by mentioning some of those of immediate interest; the purpose is to present some of the physiological reasons for the proposition that the problem of psychiatry lies in the functional psychoses.

A distinctive feature of modern biology is the fundamental conception of a living body as a physical mechanism (Huxley); underlying all the phenomena of the animal organism is the reflex action of the nervous system, and physiologists generally agree to consider every action as aroused by some cause or stimulus (Sedgwick); under the biological conception man is an organism for reacting on impressions (James). The nervous and mental mechanisms being regarded as constituted of three minor ones, their action appears in a sensory—a central or transformation—and a motor process; in the central process part of the work done by the nervous system leads to consciousness; the response to a stimulus may be a muscular contraction, a secretion in a gland, a vascular change, or even a trophic or metabolic influence,—all pertaining to the centrifugal system. While reflex action is not conscious action, one may be conscious of the act, and in many cases conscious changes precede, accompany or occasion the change. The most important reflex of all is commonly ignored, viz., that which provides for the constant readjustment of the parts of the system to each other, by virtue of which the entire mechanism is receptive even to minimal stimuli. This may be termed the *neuro-equilibrium reflex*. The tone of the nervous system is this wonderfully complex adjustment of inhibition and stimulation. Every metabolic process in all the nerve cells exerts its influence on the entire nervous system. One of the most remarkable reflex associations is that between vaso-motor alterations and the seat of the emotion, which are thus intimately involved with the viscera and vessels in their minute connection with the sympathetic system. This association has a most important influence in the mental sphere, though beyond this fact little is yet known of the physiological basis of these reactions.¹⁹

The intimate connection of mental states and the physical reactions of the whole body is well recognized by both physiologists and psychologists; it is of fundamental importance in psychiatry. Lombard²⁰ describes the cells of the central nervous system, during waking hours, as continually under the influence of a shower of weak nervous impulses, coming from the sensory organs all over the body; moreover, activity of brain-cells, especially emotional forms of activity, leads to an overflow of nervous impulses to the spinal cord and an increased irritability, or, if stronger, excitation of motor nerve-cells. There is a constant inflow from the environment of a vast number of excitations ordinarily disregarded by the mind but all the time influencing the nerve-cells; the effect of this multitude of afferent stimuli, in spite of their feebleness, is to cause the motor cells to continually send delicate motor stimuli to the muscles and to keep them in the state of

¹⁸ For an account of the beginning of the present laboratory methods, both psychological and chemical, at the McLean Hospital in 1889, see "Les Laboratoires de Psychologie en Amérique," by E. B. Delabarre, *l'Année Psychologique*, 1895; also "Laboratory of the McLean Hospital," by G. Stansley Hall, *Ann. Journ. Insanity*, 1895. The subsequent development of the pathological laboratory and the clinical methods,—of the laboratory for pathological chemistry in 1900,—and of that for pathological physiology and psychological experiment in 1904, constitute a true psychiatric clinic of a special character, designed from the outset for the investigation of the functional conditions of mental disorder.

¹⁹ Cf. Baldwin's *Diet. of Philosophy and Psychology*.

²⁰ Lombard, W. P.: *The General Physiology of Muscle and Nerve*. *Am. Text Book of Phys.*, vol. 2, p. 143.

slight but continued contraction or tension of *musculotonus*. In these mechanisms is the seat of the kinesthetic sensations and the functional alterations that play so essential a part in contributing to the well-known symptom-factors of the "sense of effort" and "inadequacy" and motor "retardation" and "excitation."

Some of the physiologists have given much study to the relation of mental and physical states. Sherrington's "discussion of common and organic sensation and the contributing cutaneous sensations has an extraordinary interest for psychiatry. Common sensation is understood to mean that sum of sensations referred not to external agents but to the processes of the animal body, and these sensations possess strong affective tone. Total common sensation is the result of many component sensations, and those that arise in internal organs and viscera contribute a great deal to the total sum. Affective tone is the constant accompaniment of sensation; every form of common sensation is based on perception of an altered condition of the body itself. In connection with this comes the fact that all forms of common sensation present significantly pre-eminent attributes of physical pleasure or physical pain; and all are linked closely to emotion.

The elaborate researches of many observers in recent years concerning the nature of the muscular sense, the senses of touch, pain and temperature, and their special mechanisms, strengthen the common fact that their sum contributes to the effects upon mental feeling-tone. They are in their nature productive in part of the organic sensations. "Habit" has studied, more than anyone else, the psychology of the emotions and the logic of their mental and physical reactions; he describes the presentations in the conscious mind of organic sense as constituting a vast aggregate of impressions arising from within the organism and continually flowing towards the superior nervous system; it is this region of subject consciousness that gives the consciousness of being, the sense of personality. The sensations from the special senses are intermittent of high intensity, and small in volume compared with the voluminous though faint, continuous, and all-pervading commotion produced by the organic sensations. These are intense enough, however, to be susceptible in health of psychical interpretation as a sense of well-being; from their disorders and intensification, come the sense of ill-being. These are the long recognized changes of coenesthesia. Professor James has shown the intimate relation of the emotional tone to bodily states; and Professor Ladd makes clear the usefulness to psychiatry of a study of the affections and emotions in their relations to the train of ideas, and to the different bodily organs; also the reflex effect of the changes in these organs upon both the feelings and the ideas.

Underlying all these physiological phenomena of the living organism is the primary attribute of irritability. All the functional phenomena being influenced, within normal limits, by changes of irritability in the central, peripheral, sensory and motor mechanisms, and these changes being dependent upon the processes of nutrition and metabolism, and upon conditions of use and disuse, rest and fatigue, etc., the alterations of functional efficiency in the associated reactions of mind and body make the study of cellular physiology imperative for psychiatry. Some of the most commonly observed and characteristic symptoms in mental diseases may be referred to such functional disorders in the physical organism.

The healthy organism being fully constituted in structure and function for its work, when put in use begins immediately to be subject to modes of action which are the effects of its own activities. In other words, the living organism acquires functional characteristics as the immediate effects of use. Some of the common physiological laws have a special importance here because they govern the work of the physical mechanism and therefore of all correlated mental reactions, not only in health, but in disease as long as any functional activity continues.

(1) Association and habit are fundamental in mental life; in respect to the association of ideas it is not the ideas that associate but the elementary processes of which the ideas are composed; on the physical side the law reduces to the law of habit (Titchener). Memory is an associative process; mental reactions (including perceptions, ideas, emotions) are associated with their physical correlatives and motor consequences. Habit is closely related; it is the functional disposition to repeat organic processes. This law of association and habit applies to "organic memory", thus "associative memory" is fundamental in and unites both psychical and physical reactions.

(2) Inhibition. The animal organism has a motor character. All sensations and mental states are motor; the entire neuro-muscular organism, mental and motor, acts primarily as a whole governed by the laws of association, and this is subject to control. "The phenomena of nervous life are the outcome of a contest between what we may call inhibitory and exciting or augmenting forces" (Lyster). It is conceivable that all nerve centers are normally at all times subject to continuous control or inhibition, and are maintained in a condition of mobile equilibrium by the opposition of this inhibition to their own inherent tendency to discharge (Mermet).

Inhibition is an action which obstructs or impedes another action, and which weakens or arrests it if it was already in action (Osborne).

Voluntary action is at all times the resultant of the compounding of our impulses with our inhibitions (James). "The inhibition of a mental process is always the result of the setting in of some other mental process" (McDougall). It may be said as a physiological conception that in living substance there are conditions of cohesion and inertia by virtue of the anabolic tendency of its physical and chemical elements; this may be called *physiological inhibition*; and it is the primary factor in the mobile equilibrium conservatively holding the balance against the tendency to discharge induced by constant external stimulation. The psychological conception of the essential physical fact is that one mental process inhibits another, that is, that as a will-impulse implies a motor process which may inhibit or excite and again excite other mental or neural process, thus that the called *voluntary inhibition*. The great importance of the study of inhibition which is only indicated here lies in its holding an equal and counter

² Sherrington, L. S. *Cutaneous Sensations*. Schuster, 1901. *Texts of Physiology*, vol. 2, p. 660 et seq.
³ Ribot, Th. *Traité de la Personnalité et de l'Psyché*. *Journal of the Emotions*.

balancing place in mental and physical processes.

(3) Energy of muscle and nerve. This refers to the principle of the storage and discharge of energy, and the biological theory that functional activity of a specialized tissue depends primarily upon chemical changes in its individual cells. The fundamental idea is that in the resting state the cell elaborates highly complex compounds and that these break down to yield the energy by which the cell does its work; discharge and restoration of energy is common to both nervous and muscular elements. Hughlings Jackson characterizes the animal organism as "an apparatus for the storage and expenditure of nerve force." These principles are of essential importance in the study of mental disorders. Inasmuch as functional efficiency must be taken as measure of the available energy, it should be expected that exhausting influences would reduce functional power. Such reductions characterize all forms of the functional psychoses, and the variations of their symptoms are consistent with this principle.

(4) Physiological use and fatigue. — waste and repair. The law of use includes the wholesome effects of those just cited; normal use develops functional activity and strengthens power, while disuse weakens function. Overuse begets fatigue, and normal fatigue presents mental as well as physical effects. *Physiological fatigue* may be continued beyond the point of regular recovery by rest and nutrition; it then becomes the *pathological fatigue* of nervous exhaustion or neurasthenia with the characteristic symptom-groups. A functional conception of the significance of these groups of mental and physical symptoms should stimulate not only such a precise observation of them as is needed to constitute "disease-forms" and mature types, but should lead to their being analyzed and traced to their functional sources in the whole organism in accordance with the principles of general pathology. This method reveals the genesis in physical states of some of the most characteristic mental manifestations. Beginning with the fundamental attribute of irritability, for example, wide variations occur within normal limits, but more striking and significant changes appear in all forms of pathological fatigue, and the functional psychoses: the irritable weakness and languor of neurasthenia, and the psychomotor excitations, retardations and "confusions" of melancholia and mania are examples. The study of these alterations of irritability involves the whole problem of reflex-action and the mechanism of responses to stimulation of both mental and physical functions. It is to be recognized also that all of these reactions contribute to the sensory returns from the whole organism. — from the viscera, muscles, and even the special senses including the special dermal sensations, to the central nervous system, constituting the kinesthetic and organic sensations. In mental physiology a functional conception of these reactions reveals their importance for an understanding of the genesis of emotional changes and

the alterations of the affective tone in states of persistent mental depression. The sense of well-being and ill-being depends upon these variations. Most important of all, because so completely neglected in psychiatry, are the bluntings and losses of organic sensations and the consequent effects upon the feeling-tone and ideation; in this regard attention should be called, especially, to a remarkable fact well-established in physiology and psychology. It is evident that the normal irritability of nerve and muscle requires the maintenance of a certain chemical constitution; slight variations from this, temporary or continuous, alter or may destroy the irritability. Further, it is noticeable in most cases that the first step toward deterioration is a rise of irritability; the cause being increased or continued, sooner or later exhaustion supervenes, the irritability lessens and is finally lost.²³ These functional reductions of sensibility, in a wide range of varied degrees and combinations, are constant symptom factors in psychiatry.

The relation of mental physiology having an essential importance for psychiatry there should be a first reference of all mental symptoms to their functional sources in the organism as far as possible with respect to their correlation and association with alterations of bodily functions. By the genetic method study should begin with the minor changes from normal action; these alterations show intensifications and losses of function, and symptom-groups are modified by their varied combinations.

(To be continued.)

Original Articles.

VAGINAPEXY.

BY W. P. GRAVES, M.D., BOSTON.

THE encouraging results of the operation for procidentia devised by Dr. W. H. Baker and named by him vaginapexy have led us to make a preliminary report of its progress.

Vaginapexy, as the name implies, denotes an operation for stitching the vagina to the abdominal wall and is used in cases of extreme vaginal relaxation, such as prolapse, incomplete and complete procidentia and advanced cystocele. The idea of attaching the vagina to the abdominal wall, although independently worked out by Dr. Baker, cannot be claimed as a new procedure for it has been suggested, and, to some extent used, since 1893, and during the past year employed with success by Dr. Polk of New York, also working independently, and described by him at a meeting of the Practitioners' Society in New York, May 5, 1905.¹ The operation developed by Dr. Polk at about the time that Dr. Baker was working on his operation consisted essentially of the same fundamental principle, namely, the attaching of the vagina to the abdominal wall, and was given by him the Greek name

²³ Am. Text Book of Physiology, vol. 2, p. 61.

¹ New York Medical Record, Aug. 10, 1905.

colpo-orrhaphy, synonymous, of course, with the Latin term vaginapexy, adopted by Dr. Baker. The two operations have differed in several features in the process of their parallel development, and for that reason vaginapexy is here described as an independent operation.

In the practice of gynecological plastic surgery the treatment of prolapse, procidentia and cysto-

dominal wall after the removal of the uterus and appendages is a plausible operation, but this operation with the appendages and uterus *in situ* would at first seem to be an unsurgical and well nigh impossible procedure. It can at once be seen that by seizing the vault of the vagina from the abdominal side and drawing it up to the abdominal wall the uterus is completely

and would suggest symptoms such on the bladder and tension on the call or on the vagina, to say nothing of dangers in a future conception, a year's time is possibly too short a rich to make the most definite claims to the results in such an operation as certainly long enough to give correct with regard to most of the above symptoms. In not one single case, there has been extreme anteversion ision on the vagina and abdominal there been any bladder symptoms but, on the contrary, cases in which distressing bladder symptoms due to any cystocele, have been cured in a comparatively short time.

be said that the anteversion itself a very few weeks and examination erus to have settled into its normal h regard to its longitudinal axis, d, too, that the deep depression which i in the abdomen following one of ions usually completely disappears atient leaves the hospital and in no e any symptoms which might be he tense drawing of the vagina been of. With regard to the possible h might ensue in view of a future are obliged to be more guarded ent. None of our cases have become lowing operation. Of course, as a pority of cases which require vaginar e near the close of or past the child- al. In younger women the presence a almost always implies at least two ions conceptions, so that it is usually for such women to be deprived of e of having more children. There se, be a certain possibility of trouble ation of the vagina in the case of d in all cases where that might be have advised our patients to avoid bearing.

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completely or incompletely given way and would, therefore, imply conditions of marked prolapse, complete or incomplete procidentia with accompanying cystocele. It may be well in this connection to define clearly the manner in which the terms "prolapse" and "procidentia" are used. Prolapse includes those cases where the cervix has dropped down from its normal horizontal plane in the pelvis, but has not dropped far enough to appear at the vaginal outlet. Partial procidentia includes those cases where the os appears at the

VAGINAPEXY GRAVES



Drawing showing the sutures placed in position for vaginapexy. For the purposes of illustration the sutures are represented as not drawn tight. When the sutures are drawn tight, the two folds of the posterior cul de sac are approximated to the left and right of the anterior abdominal wall, while the fundus of the uterus is tipped directly over and forward toward the bladder. The drawing represents semi-diagrammatically a view directly into the wound, the patient being in the Trendelenburg position.

the vagina was sewed by deep stitches to the periosteum of the pubes. This in many cases resulted successfully, but, as can be imagined, even at the best such an attachment could hardly be strong enough to withstand permanently the powerful abdominal pressure from above. Disregarding then the rami of the pubes as fixed points from which to suspend the vagina it is manifest that the only available point of fixation is the anterior abdominal wall.

The fixation of the vagina to the anterior ab-

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(3) Energy of muscle and nerve. This refers to the principle of the storage and discharge of energy, and the biological theory that functional activity of a specialized tissue depends primarily upon chemical changes in its individual cells. The fundamental idea is that in the resting state the cell elaborates highly complex and that these break down to yield the which the cell does its work; discharge of energy is common to both muscular elements. Hughlings Jackson characterizes the animal organism as "an for the storage and expenditure of ner These principles are of essential import; study of mental disorders. Inasmuch functional efficiency must be taken as meas available energy, it should be expected exhausting influences would reduce power. Such reductions characterize the functional psychoses, and the var their symptoms are consistent with this

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colpo-orrhaphy, synonymous, of course, with the Latin term *vaginapexy*, adopted by Dr. Baker. The two operations have differed in several features in the process of their parallel development, and for that reason *vaginapexy* is here described as an independent operation.

In the practice of gynecological plastic surgery the treatment of prolapse, procidentia and cystocele by numerous and ingeniously devised operations has always been uncertain and often discouraging. In the more severe cases a complete cure could never be truthfully, promised and even in moderate cases it was often necessary to do repeated operations in order to meet recurrences of the original condition. It has been a not uncommon circumstance to find patients with distressing forms of procidentia who had suffered for years because they had been told by their physician that their trouble was surgically incurable. The operation devised by Dr. Baker has not only completely revolutionized our surgical treatment of these cases, but has encouraged us to give a far more hopeful prognosis than could have been given under the surgical treatment formerly used.

It seems to me that the reason that former operations for procidentia, prolapse and cystocele were only partially successful was due to the lack of appreciation of the mechanical principle, essentially needed to repair these conditions. Severe cystocele, procidentia and prolapse are phases of one and the same anatomical lesion, namely, loss of fascial support made by the attachment of the vagina to the rami of the pubes. This attachment of the vagina is, in my opinion, far the most important element in maintaining the integrity of the position of the female pelvic organs. There is no doubt that the uterus is maintained largely in its normal horizontal plane in the pelvis by this vaginal attachment, and the same can be said of the lower portion of the bladder. Prolapse, procidentia and the accompanying cystocele are invariably the result of lack of this vaginal support, and conversely it follows that the rational cure for these conditions must be the restoration of this same vaginal support.

If this premise be accepted as true it is obvious that the first object in devising a cure for the conditions mentioned is to select some method of restoring the vaginal support of the pelvic organs. It has proved an uncertain procedure to attempt to attach the vagina to the rami of the pubes, although in an early operation invented by Dr. Baker and used by him for many years the vagina was sewed by deep stitches to the periosteum of the pubes. This in many cases resulted successfully, but, as can be imagined, even at the best such an attachment could hardly be strong enough to withstand permanently the powerful abdominal pressure from above. Disregarding then the rami of the pubes as fixed points from which to suspend the vagina it is manifest that the only available point of fixation is the anterior abdominal wall.

The fixation of the vagina to the anterior ab-

dominal wall after the removal of the uterus and appendages is a plausible operation, but this operation with the appendages and uterus *in situ* would at first seem to be an unsurgical and well nigh impossible procedure. It can at once be seen that by seizing the vault of the vagina from the abdominal side and drawing it up to the abdominal wall the uterus is completely anteverted and would suggest symptoms such as pressure on the bladder and tension on the abdominal wall or on the vagina, to say nothing of the possible dangers in a future conception.

Although a year's time is possibly too short a period in which to make the most definite claims with regard to the results in such an operation as this, yet it is certainly long enough to give correct information with regard to most of the above mentioned symptoms. In not one single case, even where there has been extreme anteversion or much tension on the vagina and abdominal wall, have there been any bladder symptoms whatsoever, but, on the contrary, cases in which there were distressing bladder symptoms due to the accompanying cystocele, have been completely relieved in a comparatively short time. It may also be said that the anteversion itself disappears in a very few weeks and examination shows the uterus to have settled into its normal position with regard to its longitudinal axis. It may be said, too, that the deep depression which is often seen in the abdomen following one of these operations usually completely disappears before the patient leaves the hospital and in no instance have any symptoms which might be referred to the tense drawing of the vagina been complained of. With regard to the possible dangers which might ensue in view of a future conception we are obliged to be more guarded in our statement. None of our cases have become pregnant following operation. Of course, as a rule, the majority of cases which require *vaginapexy* are either near the close of or past the child-bearing period. In younger women the presence of procidentia almost always implies at least two or more previous conceptions, so that it is usually no hardship for such women to be deprived of the privilege of having more children. There must, of course, be a certain possibility of trouble following fixation of the vagina in the case of pregnancy and in all cases where that might be possible we have advised our patients to avoid further child-bearing.

Indications for operation: The indications for *vaginapexy* are present in all cases where the vaginal attachment to the rami of the pubes has completely or incompletely given way and would, therefore, imply conditions of marked prolapse, complete or incomplete procidentia with accompanying cystocele. It may be well in this connection to define clearly the manner in which the terms "prolapse" and "procidentia" are used. Prolapse includes those cases where the uterus has dropped down from its normal horizontal plane in the pelvis, but has not dropped far enough to appear at the vaginal outlet. Partial procidentia includes those cases where the os appears at the

vaginal outlet and protrudes from it. Complete procidentia signifies that the uterus may be forced by abdominal pressure entirely beyond the vaginal outlet. The following then may be formulated: Vaginapexy is indicated in all cases of incomplete or complete procidentia; in those cases of prolapse where the ordinary suspension or fixation of the uterus does not draw the vagina firmly up into the pelvis; and, finally, in those cases of cystocele where the lateral attachments of the vagina have given way. It will thus be seen that the operation is especially valuable for the cure of the worst forms of cystocele and goes far toward solving the difficult problem of curing this condition. It is, of course, true that many cases of cystocele occur where the uterus still maintains its normal level in the pelvis and that the protrusion of the bladder into the vagina is simply a thinning out of the anterior vaginal wall without the loss of the lateral supports. This class of cases can nearly always be cured by some one of the numerous forms of anterior colporrhaphy, if it be borne in mind continually that the real support in an anterior colporrhaphy should be taken from the lateral attachments of the vagina.

It must be remembered that in all cases where vaginapexy is indicated one or more operations must always be done in conjunction with it. Dr. Polk advocates a complete hysterectomy in every case of procidentia. This is not, it seems to me, necessary excepting where the body of the uterus itself is extremely heavy and burdensome, either from a long standing congestion and gland hypertrophy or from the presence of fibroids or malignant disease. In the majority of cases of procidentia we find that the fundus of the uterus is undergoing atrophy, that the cervix itself is long, attenuated, sometimes to the extent of four or five inches, and that the cervix terminates, in its exposed part, in a greatly hypertrophied and ulcerated mass. In other words the chief weight of the uterus is not at the fundus, but in the hypertrophied, elongated cervix. In my own cases it has seemed to me advantageous instead of performing a hysterectomy to amputate the cervix and to carry this amputation as far up toward the body of the uterus as it is possible to go without opening the abdominal cavity. This leaves the small atrophied fundus of the uterus to act as a firm cap to the vault of the vagina, and its weight is so inconsiderable as not to affect the future outcome of the operation. The amputation of the cervix, if properly performed, involves almost no risk to the patient's life such as is incurred in a complete hysterectomy, and this consideration is of no small importance in the case of elderly or even aged women who often present the most distressing forms of procidentia.

The amputation of the cervix, or hysterectomy, if deemed advisable, is performed first; the patient is then put in the Trendelenburg position and the operation of vaginapexy is done. This completes the first step of the treatment and the patient should be allowed to recover completely from these two operations. She is then allowed

to be up and about on her feet for several days. At the end of this time it can be seen how completely the vagina is held up and how much slack is to be removed in the plastic operation now necessary. The patient is again etherized and placed in the perineal position. In our first operations we usually found it necessary to perform an anterior colporrhaphy and then do a deep and thorough perineorrhaphy. In our later operations, where undoubtedly the vagina has been somewhat more boldly attached to the abdominal wall, it has usually not been necessary to perform an anterior colporrhaphy, but instead an extensive Emmet's perineorrhaphy, where the denuded lateral sulci are carried well up toward the cervix and high up on the lateral walls so that when the lateral stitches are tied the caliber of the vagina is very much lessened and a thick, firm, perineal support is gained. The vaginal outlet is made somewhat smaller than in the ordinary operation of perineorrhaphy and the denudation of the external perineum carried somewhat further out toward the buttock in order to give added strength and thickness to the perineum.

The operation of vaginapexy has been done 19 times at the Free Hospital for Women and at Dr. Baker's Private Hospital. Of these Dr. Baker has done 8, Dr. Pease, 1, and I have done 10. These operations have been done at intervals for more than a year and though it is too early to claim a permanent cure of those more recently done, the results as carefully observed are extremely satisfactory and far exceed in value for a proportionate length of time the results of operations formerly used for the relief of prolapse, procidentia and cystocele. In only one case has there been a recurrence, and in this case which was one of the earliest cases done, the vagina was stitched only to the peritoneum of the abdominal wall in the manner of a ventro-suspension. The operation was performed a second time and the stitches carried through the fascia instead of the peritoneum in the manner of ventro-fixation. A perfect result followed. This procedure has been employed in all of the other cases and in none of them at the present time has there been the least suggestion of a recurrence. It is, of course, necessary to avoid too great enthusiasm in the early stages of operative experimental work, and it is for that reason that this paper is presented only as a preliminary report. It can, however, be said that we now feel the greatest encouragement in undertaking the surgical treatment of the distressing condition of procidentia and our prognosis to the patient can be made with far greater hope and confidence of a permanent cure than was possible from the employment of former surgical measures.

The technique of the operation is as follows: The patient is placed in the Trendelenburg position and a small median abdominal incision made. The intestines are then packed away with gauze in order thoroughly to expose the posterior cul-de-sac. Beginning first on the right side, a point is selected a little posterior and external to the

peritoneal reflexion of the posterior cul-de-sac from the wall of the uterus. This point is then seized with the bullet forceps, the forceps being carried deep enough in order actually to seize the wall of the vault of the vagina. In order to ascertain whether or not the wall of the vagina is included within the teeth of the bullet forceps it is a safe plan to have an assistant insert his finger in the vagina so that he can give information as to whether the vagina is really being drawn up by the traction of the bullet forceps. When it is found that the vagina is firmly grasped, a silk suture, preferably No. 10 braided silk, is passed through the tissue to take the place of the bullet forceps. The suture is then passed up through the peritoneum, rectus muscle and fascia of the abdominal wall about one half to three quarters of an inch from the incision. It is then passed back again into the abdominal cavity and included with the other end of the suture in a pair of snaps. The same procedure is then carried out on the left side and the two sutures tied, drawing the vagina firmly up to the anterior abdominal wall and completely anteverting the uterus, the knots being thus left within the abdominal cavity. The abdominal incision is then closed with great care, in layers. In passing the suture through the floor of Douglas's pouch I have found it advantageous to employ the stitch devised by Mr. Max Brodel for the suspension of prolapsed kidneys as it gives far greater tensile strength. This stitch is depicted in the accompanying drawing. It is, of course, essential to avoid carrying the suture through into the vaginal cavity.

CONTRACTILE PROCESSES IN THE LUNG AS A RESULT OF PHTHISIS, WITH REFERENCE ESPECIALLY TO THEIR PRODUCTION OF PERMANENT DEXTROCARDIA.*

BY HENRY B. DUNHAM, M.D.,

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AFTER a careful search through numerous published reports, I have been able to collect about twenty cases of acquired dextrocardia as the result of a chronic contractile pulmonary tuberculosis. Although only able to find record of twenty cases of acquired dextrocardia of the variety described (the left side of the chest appearing sound, or practically so), I think that many unreported cases must have occurred.

The question as to whether the heart is chiefly pulled or pushed over, although of small consequence, is interesting as a pathological study. In Albutt's system, Vol. V, p. 207, Dr. Percy Kidd says: "In the fibroid or contractile form of pulmonary tuberculosis signs of excavation are generally to be recognized at one apex, associated with much dullness over the upper lobe or over the whole lung, together with displacement of neighboring organs. When the right lung is

contracted the heart is drawn over and may lie wholly to the right of the middle line. In extreme contractile cases the opposite lung is always considerably enlarged and may pass beyond the middle line of the sternum into the opposite half of the thoracic cavity."

The above description fits all of the cases, but does not explain why there should be actual enlargement of the left half of the thorax as in a true compensatory emphysema.

In both my cases mensuration of the chest early in the course of the disease and then after the displacement shows that bulging of the ribs on the left side has surely occurred. The circumference of the thorax on the left side is not only greater than the right, but is greater during both inspiration and expiration than was formerly the case. The chest expansion, however, is much diminished, being about one half of the former measurement.

A fairly accurate idea of the period of time required for complete transposition of the heart in these cases is of some value, but in all cases previously reported the displacement was already complete when the patient came under observation. In all cases the right lung was the site of the tuberculosis, which always seemed to be of a chronic fibroid type with sclerosis of the lung tissue and bronchiectasis. The left lung seemed always either sound or very slightly affected. All of the observers lay great stress upon the contraction and sclerosis of the right lung and said either nothing or very little of the compensatory hypertrophy of the left lung as a factor in the causation of the malposition. An x-ray examination of my two patients' chests shows a decided augmentation in volume of the left lung. There is perfect transparency over the normal site of the heart, and upon percussion good resonance is elicited over the same area. Of all the recorded cases only one was reported as having been examined with the assistance of the x-ray, and in this instance (Barbier) there was found "augmented volume" of the left lung. This feature strikes me very forcibly as being a potent causative factor of the complication. With one of the patients the change was gradual and unnoticed other than the fact of a realization that the heart was beating upon the right side instead of left where he had ordinarily been accustomed to feel it. In the other case transposition was sudden, at least in part, because the patient was conscious of the change in position, which occurred during a coughing attack which he had while working and he felt something move in his chest towards the right side. If coughing was responsible in any way for the movement within his chest, then certainly augmentation of volume of the left lung must have been a more important factor at that instant than the adhesions or sclerosis of the right lung which occurred but gradually.

The present measurement of the left chest is greater than one half of the circumference of the whole chest as taken both now and before the transposition, for chest measurements were made

* Presented with two illustrative cases at a meeting of the Boston Clinical Club, July 28, 1905.

* The numerous cases of dextrocardia acquired temporarily as a result of effusion or pneumothorax in the left pleural cavity, but rarely are not this type of displacement.

at regular intervals for a long period two years before any displacements occurred.

From observation of these two cases I should be inclined to say that the emphysematous enlargement of the left lung was not merely a passive filling up of unoccupied thoracic space due to contractile processes on the opposite side, but to an attempt at genuine compensatory hypertrophy which would cause slight pressure upon both the heart and the opposite incapacitated lung.

The physical signs in both these cases, at present, are very nearly the same. The left lung is hypertrophied and there is normal pulmonary resonance over the usual area of cardiac dullness. Fluoroscope shows complete transparency at this point, while on the right there are varying degrees of dullness or flatness over the entire side of the chest, front and back. The cardiac impulse is plainly visible and palpable considerably to the right of the sternum somewhat above the level of the normal position on the left. The boundary of the heart is less easily found by percussion on account of the contiguous compressed and diseased pulmonary tissue in which fibroid changes have doubtlessly occurred. However, the site of the heart can be obtained by means of the fluoroscope which reveals contraction and dilatation of the cardiac shadow.

My cases differ from others which have been reported in that I can give no autopsy findings, but the two cases are unique in that we have records of physical examinations prior to the transposition.

CASE 684B. J. P., male; age, thirty; occupation, coachman; single. Admitted, Sept. 18, 1900. Discharged, Oct. 1, 1901.

Patient gave history of having coughed for one and one-half years; bacilli present; slight hemoptysis in spring, 1894, and spring, 1899.

Examination at entrance showed: Dullness to third rib with slight dullness below; râles also in this region front and back. Respiration very "blowing and hollow" in extreme right apex. *Heart normal.*

Sept. 21, 1900. Dullness to third rib in right apex and to spine of scapula behind. Few crackles increased on inspiration and on cough, more marked in front. Respiration broncho-vesicular in left apex behind. *Heart normal.*

Nov. 23, 1900. Dullness in right upper third in front and upper two thirds behind. Obscure dry râles, not increased after cough, over greater portion of right front, most in top. Respiration rather harsh in right apex. Respiration is decidedly broncho-vesicular with increased expiratory murmur at about one inch below spine of left scapula. (Jan. 31, 1901. Tubercle bacilli numerous.) *Heart normal.*

May 29, 1901. Dullness still persists in upper right front and back to quite a marked degree. Coarse crackling râles, most distinctly heard in top, decreased in number downwards. Local spot of bronchial breathing in left back is less concentrated, and a harsh respiration extends through lower portion of left back. *Heart normal.*

Summary at exit: Oct. 1, 1901. Dullness marked in right front and back. Râles behind much fewer. Very little cough or sputum. Heart slightly rapid. Afternoons (90) during entire stay. Temperature always about normal. Length of stay, twelve months and twelve days. Gained 19 lbs. Discharged. Goes

to work in sanatorium barn. (Moderately advanced phthisis. Very much improved.)

Subsequently: Went to work in sanatorium barn as stableman, feeding O. K. Worked one year when began to feel weak and lose weight; dyspnea quite noticeable. Left the barn and has since been doing light work in the sanatorium. About middle of July, 1904, felt heart beating on right side. Does not remember feeling heart leave its normal position, and has noticed no ill effects from this unusual occurrence.

July, 1905. Marked dyspnea, cough, sputa, etc.; about the same as has existed for past two years, not so severe, however, as to prevent his doing light work. There were numerous physical examinations of the chest made since patient's discharge, sufficient to show that the change in heart position must have occurred between April 1 and July 15, 1904.

CASE 460 C. W. B., male; age, twenty-two; occupation, elevator boy; single. Admitted, Dec. 28, 1899. Discharged, April 17, 1901.

Patient gave history of having coughed for one year. Mother and mother's two sisters died of phthisis. Bacilli present.

Examination at entrance showed: Slight dullness right clavical center; also, slight dullness and sibilant râles in left apex to first rib. Both clavicles prominent. Heart action violent (normal position).

July 23, 1900. Apex beat of heart on (left) mammary line. More dullness at right apex to first rib, and broncho-vesicular respiration. Signs on left gone.

Summary at exit: April 17, 1901. Physical signs same. Cough and sputa still persists. Heart always slightly rapid.

Temperature generally normal. Length of stay fifteen months and twenty days. Gained 93 lbs. Was troubled with cardiac hypertrophy which gave rise to occasional cardiac disturbances with accompanying symptoms. Goes to outside work in Worcester, Mass. Bacilli present. (Moderately advanced phthisis. Very much improved.)

Subsequently: Went to Worcester and worked on the electric cars as conductor for six months. Lost considerable weight and began to feel weak, so returned to Rutland March 19, 1902. Rested for three months, then ran a carriage from the sanatorium to Muschopauge dépôt for four months. Came back to the sanatorium Nov. 1, 1902, and worked in the dining-room nine hours each day. Remained at this work for five months. Exacerbation in May, 1903; rested a while, then went to work, taking care of seven rooms four hours each day. On Aug. 16, 1904, while working, had a severe spell of coughing and felt his heart move from the left side to the right. Became faint, but on lying down for an hour recovered and seemed as well as usual. Continued at work until Dec. 12, 1904, when was taken with chills and faintness and could hardly breathe. In bed three weeks; high temperatures and insomnia. After this, was up and around his room for five weeks. Feb. 7, 1905, left the sanatorium and went to a private boarding-house in Rutland. Began to lose strength with temperature 101° to 103° afternoons during February, March and April. Strength and appetite returned under treatment, and since June 8 has been able to be out-of-doors. Now says he must be careful about his heart; otherwise feels fairly well. Temperature almost always normal since June 8. Physical examinations of heart and lungs were made several times subsequent to the date of discharge, and patient's statement in regard to heart corroborated.

With each of these patients the disease has existed over seven years. At the present time (February, 1906) they can exercise but little, but

the physical signs in the lungs are about the same as nearly a year ago, when marked dullness extended over the entire right lung; one having "cracked pot" percussion note just below the right clavicle. Medium râles were scattered throughout the right and also in the top of the left lung in each case.

Contractile processes are always chronic, but when (compensatory?) emphysematous changes occur in the opposite lung I think the chronicity will probably be even more pronounced.

SOME OF THE CASES WHICH HAVE BEEN REPORTED

- 1868, Greenhow. *Tr. of the Path. Soc. of London*, vol. 19, pp. 150-161. One case.
 1880, Brackenridge. *Lancet*, London, vol. 1, pp. 80-117. One case.
 1888, Kukharsh. *Kavkazsk Med. Obozr.*, Tiflis, vol. xiv, pp. 511-523. One case.
 1893, Bard. *Lyon Med.* One case.
 1894, Van Hye. *Journ. de Méd. de Bruxelles*. One case.
 1896, Fernel. *Bull. et Mém. de la Soc. Méd. des Hôpitaux*. One case.
 1897, Moutard-Martin. *Bull. et Mém. de la Soc. Méd. des Hôpitaux*, Jan. and April. One case.
 1897, Peik. *Bull. et Mém. de la Soc. Méd. des Hôpitaux*, July. One case.
 1897, Cochea. *Gazette des Hôpitaux*. One case.
 1898, Hall. *Med. Fortnightly*, St. Louis, vol. xii, No. 4, p. 95. Two cases.
 1898, Oki. *Tokio I-shin Shi*, pp. 126-128. One case.
 1899, Garnier. *Presse Médicale*, July 12. One case.
 1899, Leprieu. *Lyon*. *Soc. Méd. des Hôpitaux*, May 26. One case.
 1899, Harber. *Bull. et Mém. de la Soc. Méd. des Hôpitaux*, vol. xvii, pp. 187-191. One case.
 1900, André. *Lyon Med.*, vol. xvi, p. 417. One case.
 1901, Lannegre. *Compt. Rendu de l'Acad. de Sc.*, vol. cxxxix, p. 225. Two cases.

Clinical Department.

A CASE OF INVERTED UTERUS.*

BY C. H. HARE, M.D., BOSTON.

Gynecologist to Boston Dispensary and to Woman's Charity Club Hospital and to Out-Patients at Carney Hospital and at St. Elizabeth's Hospital.

CALLED upon to operate for an inverted uterus for the first time it was easy to reread, for methods, the paper of Peterson, of Ann Arbor, read before this society March 17, 1903, in which the methods of different operators are described, and the results of these methods, as reported in literature, are brought up to that date, but it was not so easy to select the one correct method, for it seemed a case of many modifications of the two routes, and no one method showing sufficient trial to stamp it as the best beyond dispute. The problem was one in mechanics as to how best to overcome a contracted and unyielding cervix. There must be an increase in the diameter or an incision of this tightening.

Peterson found 15 cases reported operated by the Thomas method or the abdominal celiotomy method, and its modifications by pulling on the tubes and round ligaments and by intra-abdominal incision of the ring. There were 7 failures. Of these 7 failures, 4 had an hysterectomy or amputation done; 1 died and in 2 details were not stated. By all vaginal methods 26 cases were reported, with 3 failures and no deaths. With 88% successful by vagina, and 50% by Thomas method, which later per cent was reduced to 33% when we deduct the cases

where incision was added to his method, it was my choice to operate by the vagina.

It seemed fair argument to recognize the fact that the ring could not always be dilated after abdominal celiotomy and dilating by vagina had not found favor; that by the upper route bruising and tearing of the soft parts was common and sometimes fatal in the most skilled hands; that the majority of cases were weak from hemorrhage, hence worse subjects for shock and sepsis, especially if, as has happened, the inverting pressure used after dilating should puncture a hole from the vagina into the peritoneal cavity; abdominal suspension hardly seemed imperative while vaginal suspension could be done if one was unwilling to risk a retroversion. If a favorable case is at hand, and no one knows whether or not it will be before trial, an incision of the cervical constricting fibres is all sufficient, as has been proven in several cases, and made the operator think the operation for inverted uterus was an easy and simple operation. This was the writer's delusion after his own case, but the error was at once corrected on looking up the literature of this operation. Slightly greater danger of rupture of the uterus in case of subsequent pregnancy after colpohysterotomy had little weight. Statistics argued strongly for a partial extending in case of need to complete anterior or posterior colpohysterotomy. With Piccoli's operation of complete posterior colpohysterotomy or incision from external os to fundus, showing 11 successes and 1 failure, and Spinelli's operation of complete anterior colpohysterotomy showing 6 successes and no failures, the writer decided to do the complete posterior incision in case the slighter methods failed, preferring to take the risks of a retroversion with or without adhesion, rather than the risks of injuring the bladder or ureters by the anterior incision.

Mrs. L.H., age forty, married twenty years; seven children, two miscarriages. She was first seen by me fourteen days after her last child had been born. The previous child was four years old. Menstruation had always been every twenty-eight days, flowing six days and using about twelve napkins. No dysmenorrhea. She had never had any pelvic trouble. She was attended by a man of very large obstetrical training, to whom I am indebted for the history. She had some labor pains for about forty-eight hours which were moderately hard the last twelve hours. She delivered herself and the placenta followed at once, without trouble. There was profuse hemorrhage. Convalescence was normal and he sat up on the day of my first visit. The lochia was the same as after her other childbirths. There had been no pain. General weakness was her only complaint to me. Examination showed an old tear of the perineum and a mass at the vagina, but no fundus could be felt by the finger in the abdomen. Moderate flowing followed for a week. Refraining to wait for operation, I decided to bed for general building up. She was discharged Feb. 24, 1905, or twenty days after the birth. The urine was then acid, specific gravity 1012, 1013, 1014, 1015, men, but sugar was present unless there was an error in the test, for it was never found in the following days' later test. The hemoglobin was 50% and the openings of the Fallopian tubes were not seen. It

* Read before the Obstetrical Society of Boston, Oct. 24, 1905.

seemed so easy to think that taxis would replace, that it was tried without the slightest evidence of success. This dilated the uninverted portion of the cervix, but in no way touched the tight collar or constricting inner ring. The posterior lip of the cervix was then incised and the cut continued upwards for about one and a half inches, when a "give" was felt which made me try to reinvert and to my surprise the fundus went back with ease. Another surprise was to find that no opening had been made into the peritoneal cavity. The incision was closed with catgut and the uterus then was found in good position.

Looking back for an explanation of the ease of this operation the writer believes that taxis produced the great and essential, though unplanned for condition, which made possible the easy replacement. The squeezing incident to taxis made a large fundus small and squeezed out fluids which converted a solid, firm fundus into one of a pliable, leathery consistency. The patient made a good convalescence without temperature or pulse, but because of poor general condition and many vigorous children at home, she did not leave the hospital until the seventeenth day after operation, when the hemoglobin was 70%; the uterus in perfect position and with perfect mobility.

There is little argument in one case, but from theory and statistics the writer believes that operation for inversion of the uterus should be considered easy until proven difficult. If conditions are favorable a short incision by vagina permits replacement, but this failing, we only have to extend the same incision, after the loss of a few minutes, to a point where reinversion seems assured.

The patient was seen to-day (Oct. 24). She is an overworked woman in poor general condition, having lost weight from 172 down to 147 lbs. in two years. The first three menstruations after operation were profuse, but scanty since, flowing five days with one napkin daily. No dysmenorrhea; no leucorrhoea. The uterus is in good position and freely movable. The cervix shows no evidence of operation, but looks like the ordinary, slightly torn cervix. She has no pelvic complaint and, in fact, has not seen any doctor since she left the hospital until she called her doctor for pleurisy two weeks ago.

A CASE OF EXTRA-UTERINE PREGNANCY.*

BY JOHN B. SWIFT, M.D., BOSTON.

THE interest, centering in the diagnosis of this case, seems to make it worthy of reporting.

The patient is a married woman, thirty-two years old. She has had four children; no miscarriages. She has always been well. I have attended her in her last three confinements. The labors have been easy, and the convalescence always normal. After her first confinement she had a retroversion of the uterus which was corrected by Alexander's operation, and the uterus has remained in good position ever since.

Her catamenial history is normal, the intermenstrual period being twenty-three to twenty-five days, and the flow lasting seldom more than two days. The youngest child is twenty-six months old.

Regular menstruation took place on Aug. 27, 1905, but, four days after the flow had ceased, there was a dark brown gritty discharge for several days. On Sept. 19, being the time for her catamenia, she was seized, while at breakfast, with a sudden sharp, very severe pain in the lower abdomen, beginning on the

right side. She felt faint, but did not lose consciousness. The pain was continuous, the abdomen became swollen and very tender, and there was a slight flow from the vagina, "just a stain."

The physician, who was called in, controlled the pain by a subcutaneous injection of morphia. Among other things a tubal pregnancy was suggested as the cause of the attack, and she was kept under careful observation. He has assured me that, at no time while she was under his care, was there any shock, aside from the faintness, or evidence of hemorrhage. The temperature was always normal, and the pulse about 80. She remained in bed about a week, during which time there were two slight attacks of pain, one on Sept. 21, the other on Sept. 23, neither of which required morphia.

She came to my office on Oct. 3 because she did not feel well, but could give no definite symptoms. She did not think pregnancy could be possible.

On palpation the abdomen was soft and yielding. There was some tenderness on deep pressure on the left side. No flatness or dullness on percussion.

By vagina the uterus was of its usual size and position, and I detected nothing wrong anywhere in the pelvis.

I advised her to remain in bed for another week and then to come to see me again, thinking, that, if she had had a tubal pregnancy which had ruptured, absorption would go on, but, if the sac was still growing, something might be felt later. She came at the appointed time having had no further trouble, but saying she felt much better.

On vaginal examination *something* could be felt to the left and behind the uterus, but I could make out nothing definite.

She was advised to come in to one of the private hospitals for an examination under ether, and operation, if any thing was found to warrant it. She objected to the hospital, saying her house in town was all ready for her to move into, so it was decided that she was to come home in two days. The night before she was to move they telephoned that she had a severe pain in her stomach, not like the former pain. I talked with the physician in attendance, who said this attack was nothing like extra-uterine, but rather like acute indigestion. It was suggested that a nurse be sent to them to assist in moving her to town. The next morning the nurse telephoned me that she did not think the patient should be moved that day, and asked that I go to see her. I found her rather nervous over the delay of moving. The nurse told me the attack of the preceding evening seemed to be due to indigestion, as the patient was relieved after vomiting undigested food. There had been no more abdominal symptoms. She came to town Friday, Oct. 13, and when I saw her, the next morning, she greeted me with the remark that she could not be pregnant as her regular menstruation had come on, and she felt well in every way. The nurse had found a small shred on one of the napkins which Dr. Whitney reported to be blood clot. On Oct. 16 she passed a clot resembling somewhat a cast of the uterus. Dr. Whitney reported on this: "Masses of clotted blood, among which were mingled large, single, nucleated cells similar in every way to those of a decidua. I could not find, however, any villi, or other evidence of intra-uterine pregnancy."

The original idea of an ether examination, with operation if found necessary, was decided on. On Oct. 19, under ether, there was found to be a mass, as large as my fist, behind and to the left of the uterus. The uterus was curetted, and then the abdomen was opened in the median line. On cutting the peritoneum

* Read before the Obstetrical Society of Boston, Oct. 24, 1905.

dark fluid blood welled up through the incision. The omentum was slightly adherent in places to the abdominal peritoneum. The abdominal cavity was full of fluid blood and clots, among which the fetus was found. The fetal sac was in the fimbriated extremity of the left tube, and the uterine operation was completed.

The specimen was given to Dr. Whitney, who reported:

"The specimen consisted of the end of a Fallopian tube. In this was a hemorrhagic mass measuring 6 cm. in diameter, the inner surface of which was covered with a smooth membrane. Microscopic examination of the wall showed masses of blood and fibrin intermingled with which were small branching villi similar to those of the chorion. With this specimen was a small embryo, well formed and but little macerated, measuring 2.7 cm.

"Diagnosis: Ectopic (tubal) pregnancy with rupture at about the eighth week."

The especial points of interest seem to be the question of diagnosis, and the time when the rupture took place.

With such a history as was given, when first seen by me, was there sufficient evidence to make a diagnosis of extra-uterine pregnancy? Was there sufficient evidence of any pelvic trouble demanding operation? Had rupture taken place at the time of the first attack of pain, would there not have been evidence of it which could not be missed by bimanual examination? It seems impossible that the condition found at the operation could have been overlooked by any one, least of all by one accustomed to making vaginal examinations. If, as Dr. Whitney suggests, rupture occurred Oct. 14, that is, on the day she thought she was menstruating, why was there not some evidence of it manifested by the presence of pain, and symptoms of hemorrhage?

AN INDIRECT ADVANTAGE OF THE ROUTINE APPLICATION OF CLINICAL PATHOLOGY TO DIAGNOSIS.

By LOUIS PATTERSON BISHOP, A.M., NEW YORK,
Physician to Lincoln Hospital.

An eminent Philadelphia physician some years ago, spoke of the therapeutic value of the complete physical examination, and his remark struck men of experience as containing a great deal of truth.

There is no question about the diagnostic value of a complete physical examination followed by the findings of clinical pathology. There is one advantage in the routine application of clinical pathology that it does not seem unfair to recognize, and that is the fact that it gives the consultant time for reflection, and gives him an excuse for postponing a definite opinion when a hasty conclusion may be disastrous. By organization we have brought about that a blood count can be obtained promptly without great cost, but even so two or three hours must elapse. The consulting physician occupies a position of great difficulty. He sees the patient only once and under more or less artificial conditions. His history is sometimes so confused by defects of observation, memory and complicating conditions

that often enough the opinion must be based chiefly upon results of direct examination.

A case where appendicitis is suspected must often be determined solely upon findings of abdominal palpation. Take a case like the following which is drawn from recent experience: A man was seen late at night, who gave the following history: He had been drinking to excess for a long time and much more for the past few days. Two days previously he began to suffer from nausea and vomiting; he was very much constipated and had a slight elevation of temperature. For the last twelve hours before he was seen attempts at feeding had been promptly followed by vomiting. He had not been able to sleep and was very nervous, indeed, apparently upon the verge of an attack of delirium tremens. His temperature was 101°. The abdominal palpation showed no marked rigidity, the belly was tender all over, there was no distention. Appendicitis was thought of, but the most careful elicited no history of chill, no history of marked tenderness on the right side of the abdomen at any time, and no history of a previous attack. Our opinion from the findings was that the abdominal symptoms could be fully accounted for as a result of the continued vomiting that had gone before. We did not see the patient again, but are told that on the following day there was marked tenderness on the right side a mass was detected in the region of the appendix.

Now, a case like this naturally causes chagrin on the part of the person who was led to give an opinion though it was such as he would, in all probability, repeat under similar circumstances. Still, if one made it a personal rule never to exclude intra-abdominal suppuration without a blood count, such a hasty opinion would not be forthcoming; and, in addition to the light thrown upon the case by clinical pathology, there would be the advantage of the elapse of a small amount of time, the developments of which could be included in the final conclusions. The more one sees of the graver forms of disease and watches their course under all circumstances, the more careful one becomes as to the formation of a so-called snap diagnosis.

Every active practitioner should have the service of a recent graduate well trained in clinical pathology. Or, as has been done in New York, a group of busy men might organize a co-operative laboratory to employ a group of young men during their pre-practice period.

Reports of Societies.

THE OBSTETRICAL SOCIETY OF BOSTON.

The three hundred and sixty-seventh meeting of the Society was held Oct. 24, 1905. The Howard Robinson chair, J. C. Hubbard, M.D., presided.

Dr. HARD reported:

A CASE OF INVERSION OF THE UTERUS.

DR. STEVENS. In one case of this condition I employed Emmet's method. I forced the fundus back

Nov. 1, 1905

of the cervix and then sutured the cervix over it. During the following night the fundus went back entirely. Six months later I saw an anemic woman who had been delivered one year previous. An inverted uterus was found. The same treatment was used with the same result. Within twelve hours the fundus was replaced spontaneously.

DR. WASHBURN: I have seen but one of these cases. I saw her a week after the inversion took place. She had had extreme hemorrhage. Patient was in poor condition. Moderate manipulation was tried and failed. A firm packing was put into the vagina to control any bleeding. The second packing had so far reduced the uterus that it was easily replaced. The packing itself had exerted sufficient pressure to render this easy. The placenta had been adherent and the cord had been pulled on by the attending physician. The convalescence was uneventful.

DR. KAHN: I have never seen a case of inverted uterus following delivery. I have seen one case where fibroids in the vagina were connected with an inverted uterus.

DR. MARION: I remember Dr. Stevens' case. I have reported before this society two cases of inverted uterus immediately following delivery.

DR. HILDRETH: I can emphasize the difficulty of Dr. Stevens' case. I have had one case of recent inversion. The early labor was very severe and the last part very rapid. The child, placenta and uterus all came out together with one pain. The uterus was immediately replaced. There was much shock, but the recovery was good.

DR. DAVENPORT: One more suggestion. If effective pressure can be brought on the constricting ring before fibrous changes occur it takes advantage of the fact that the muscles of the uterus relax fairly easily under constant effective pressure.

DR. REYNOLDS: How would Dr. Stevens treat such a case seen to-morrow?

DR. STEVENS: Operative interference now has more certainty of success than formerly. I think the operation described by Dr. Hare, division of the ring, would be preferable to the method used by me.

DR. SWIFT then reported

A CASE OF EXTRA-UTERINE PREGNANCY.

DR. DAVENPORT: Under ether could free blood be made out in the abdomen?

DR. SWIFT: I should say not.

DR. STEVENS: Within a year I saw a woman who had been flowing for three weeks. Three weeks previous she had had an attack of abdominal pain, accompanied with faintness. She was able a few days later to resume her work. She had not lived with her husband for sixteen years, but on close questioning admitted that she had accommodated a friend. During my examination she had much pain and grew faint. She was removed immediately to a hospital and operated upon. A ruptured tubal pregnancy was found, the rupture having occurred during the examination in my office.

DR. HARE: I have had a case similar to that of Dr. Stevens.

DR. J. G. BLAKE: In my experience an extra-uterine pregnancy is more likely to occur when there has been a long period between children.

DR. SWIFT: I think such an interval is often given in the histories of such cases. When the sac is in the fimbriated end of the tube it may more easily escape the examining fingers than when near the uterus.

DR. REYNOLDS: I remember a case of this sort. On examination all that could be made out was a tender

spot. Under ether what seemed like an enlarged ovary was felt. Operation was insisted upon. An extra-uterine pregnancy was found the size of a large hen's egg at the extreme outer end of the tube which had ruptured through all its coverings except the peritoneum. The patient has had several children since.

DR. HILDRETH showed some photographs of an erectile tissue growth on the areola of the breast. It was too near the nipple to allow the baby to nurse. Milk came from an opening in it.

DR. J. G. BLAKE: A careful dissection of the mass after lactation is over might be of benefit.

DR. REYNOLDS: If milk ducts are cut there will surely be a breast abscess with the next confinement.

DR. YOUNG: I recently reported in the BOSTON MEDICAL AND SURGICAL JOURNAL a case with two nipples on one breast. An extra nipple is connected either with one lobe of the breast or with practically a second breast.

Voted to allow the secretary to place the records of the Society in the Boston Medical Library.

Recent Literature.

Ready Reference Handbook of Diseases of the Skin. Fifth edition. By GEORGE THOMAS JACKSON, M.D. With 91 illustrations and 3 plates. New York and Philadelphia: Lea Brothers & Co. 1905.

This excellent epitome of skin diseases has now reached its fifth edition. In the present edition many new sections have been added on forms of cutaneous diseases that have received special attention of late. The book is compiled with the well-known care that its author always shows in his medical publications, and is to be heartily recommended to those who find the larger textbooks of too great bulk for convenient handling. The plates are all good of their kind.

Gumption: The Progressions of Newson New. By NATHANIEL C. FOWLER, JR. Boston: Small, Maynard & Co. 1905.

This is a sociological satire in the form of a novel. The hero's father and one of his brothers were doctors. The father practised at and around Yarmouth on Cape Cod. He was "a genuine, hempsewed, corn-fed country physician, of the gray-haired class of our oldest school. He neither wore kid gloves nor practised in them. His patients either had to get well or die, with no loitering on the way. He felt the pulse with one hand and poured castor oil with the other. Put your trust in castor was his creed." He subsequently went to Boston and settled in Roxbury where he continued to do well.

The brother went back to Cape Cod, preferring to be a big Cape Codder rather than a little Bostonian. He "treats by modern medicine, mental, sometimes rather a crude, more or less, science and systematic sympathy."

Both father and brother exploit the art rather than the science of medicine. There is not much reverence for the "is" in these pages, but they exhibit some shrewd observation of mankind and of human nature.

The Management of a Nerve Patient. By ALFRED T. SCHOFIELD, M.D. 12mo, pp. xii, 267. Philadelphia: P. Blakiston's Son & Co. 1906.

In the volume before us, the writer returns to the text from which he has been preaching for several years, — the importance of mental treatment of disease, of a study of the personality of the patient and of the influence of the personality of the physician. The details of the treatment of the neurasthenic are given with great prolixity, even to the minutest particulars of the reception of the patient in the physician's office. The work contains nothing new, is more than prolix and dwells upon the commonplaces that should be familiar to every physician, yet it is a lamentable fact that there are a very large number of physicians who neglect or are ignorant of these banal methods of professional conduct, and who would be decidedly benefited by taking counsel from this and the other volumes of the author.

Laboratory Guide in Experimental Pharmacology. By CHARLES W. EDMUNDS, A.B., M.D., Instructor in Pharmacology in the University of Michigan, and ARTHUR R. CUSHNEY, A.M., M.D., Professor of Chemistry in University College, London, and late Professor of Materia Medica and Therapeutics in the University of Michigan. Ann Arbor, Mich.: George Wahr, 1905.

This work consists of directions for the course in pharmacology given to the students of the University of Michigan. There are detailed instructions for the use of anesthetics to animals, the application of certain drugs or their active principles to animals, to show their physiological action; there are full directions for making extracts, fluid extracts, tinctures, emulsions and pills, and brief statements regarding the chemistry of some of the more important drugs. The plan of instruction is systematic and thorough, and we are convinced that a student who has conducted the experiments and followed the directions given will have a useful knowledge of pharmacology. The book should receive recognition by teachers of this subject in other medical schools.

Compend of the Diseases of the Skin. By JAY F. SCHAMBERG, A.B., M.D. Fourth edition, revised and enlarged, with 108 illustrations. Philadelphia: P. Blakiston's Son & Co.

In the fourth edition of this compend of skin diseases, the author has made sundry additions and revisions, and has added extra chapters on actino-therapy and radio-therapy.

JOHN T. BOWEN

A Manual of Physical Diagnosis, including Diseases of the Thoracic and Abdominal Organs For Students and Physicians. By EDMUND L. FEYRE, M.D., Professor of Clinical Medicine and Therapeutics in the University and Bellevue Hospital Medical College, Attending Physician to Bellevue Hospital and to St. Luke's Hospital, New York. Second edition, thor-

oughly revised and much enlarged. pp. 479. Philadelphia and New York: Lea Brothers & Co. 1905.

In this new edition the author has brought his subject completely up to date. Some sections have been entirely rewritten, and many new illustrations have been introduced. The text and cuts are clear, and, on the whole, give to the student and physician a very adequate picture of normal and pathologic conditions and of their accompanying physical signs.

Saunders' Medical Hand Atlases. Atlas and Epitome of Diseases of the Skin. By DR. FRANZ MRAECK, Professor of Dermatology in the University of Vienna. Authorized translation from the German. Second edition, revised and enlarged. Edited by H. W. STELWAGON, M.D., Ph.D. With 77 colored plates and 50 halftone illustrations. Philadelphia and London: W. B. Saunders & Co.

In this second edition of Mraeck's Hand Atlas the author has, as he states in his preface, increased the number of colored plates and also the halftone cuts, so as to make it properly reflect the dermatology of to-day. His text has also been considerably revised. As was the case with the last edition, many of the illustrations are extremely good. If any criticism be ventured, it would be that in certain of the plates one is impressed by a rather too high scheme of coloring. The book is issued in a very convenient form, and will prove as useful for the needs of the general practitioner as many more elaborate and expensive atlases.

Treatise on Diseases of the Skin for the Use of Advanced Students and Practitioners. By HENRY W. STELWAGON, M.D., Ph.D. Fourth edition; thoroughly revised, with 258 illustrations in the text and 32 full page lithographic and halftone plates. Philadelphia and London: W. B. Saunders & Co. 1905.

Dr. Stelwagon's textbook of diseases of the skin has reached its fourth edition in an almost incredibly short space of time. The present edition has been enlarged by an admirable description of the use of the Röntgen ray, high frequency current and concentrated light rays in diseases of the skin. There are a number of new cuts inserted in the text, most of them examples of the diseases most frequently encountered others representing some of the rarer diseases. It is matter for congratulation that the colored plates taken from the Mraeck "Hand Atlas" which appeared in the earlier editions, have been taken out and replaced by colored illustrations of the author's own cases. The Mraeck colored plates, as was pointed out in a notice of the earlier editions, detracted from the appearance of the book. Dr. Stelwagon's own colored plates are much better, even here however there seems a suggestion of over-coloring. The book is as has been said before, an admirable one, perhaps better suited for general use as a text-book than any now existing.

THE BOSTON Medical and Surgical Journal.

THURSDAY, FEBRUARY 8, 1906.

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THE ANNUAL REPORT OF HARVARD UNIVERSITY, 1904-05.

As usual this report discusses a variety of important university and academic questions in a trenchant and illuminating manner. The president of Harvard knows what he thinks on most if not all subjects, can state clearly and forcibly what he knows, and certainly dares maintain.

A discussion of the three years' course for the degree of A.B. is thus summed up:

"This table, therefore, demonstrates, first, that by utilizing all the existing facilities young men of good parts may get the Harvard A.B. in three years without making any unreasonable or disadvantageous exertions, and secondly, that the presence in the courses of instruction of young men who propose to get the degree in three years is not likely to impair in any way the quality of the courses, since the three years' men are, as a rule, better scholars than the four years' men. It is apparent that any young man who has made good use of the instruction offered in a good secondary school, and is then willing to use for purposes of study one half of the college vacation time, can procure the Harvard A.B. with distinction in three years, without any over-exertion, and will also have had a better training for efficiency in subsequent work at his professional school or in business than if he had taken four years to get the A.B. degree."

An interesting table is given intended to exhibit the various measures in which nine universities named recruit their medical schools and law schools from persons who have already received a preliminary degree in arts or science. Harvard is the only one of these institutions, Mr. Eliot

says, "which requires a preliminary degree for admission to its professional schools; but in several other institutions, notably at Chicago and Columbia, a considerable proportion of holders of a preliminary degree is to be found in the schools of Law and Medicine. State universities are as a rule deficient in this respect. An important aspect of this matter is the fact that the strongest support any university can give to the preliminary degrees in arts and science — its own, or those of other institutions — is the requirement of such a degree for admission to its professional schools. There would be no question about the future maintenance of that peculiarly American educational institution called a college, if the universities of the country would require an A.B. or an S.B. for admission to their professional schools."

| 1904-05. UNIVERSITIES. | MEDICAL SCHOOLS. | | | LAW SCHOOLS. | | |
|---------------------------|-----------------------------|--|------|-----------------------------|--|------|
| | No. of Male Students. | Holders of a Preliminary Degree. | | No. of Male Students. | Holders of a Preliminary Degree. | |
| Chicago | 238 | 106 | 44.5 | 157 | 94 | 59.9 |
| Columbia | 562 | 250 | 44.5 | 343 | 282 | 82.2 |
| Cornell | 355 | 54 | 15.2 | 224 | 23 | 10.3 |
| Harvard | 307 | 267 | 87.0 | 758 | 755 | 99.6 |
| Illinois | 601 | 92 | 15.3 | 129 | 9 | 7.0 |
| Michigan | 342 | 79 | 23.1 | 867 | 109 | 12.6 |
| Northwestern | 591 | 114 | 19.3 | 225 | 70 | 31.1 |
| Pennsylvania | 546 | 171 | 31.3 | 301 | 105 | 34.9 |
| Yale | 139 | 19 | 13.7 | 234 | 82 | 35.0 |

Mr. Eliot again addresses himself to the game of football and belabors it in good set fashion. Last year four pages of the report were devoted to it; the game and the conditions under which it is played were termed "hateful." This year a little more than a page suffices for the subject, but it is a terse and vigorous page. The arraignment is on much the same grounds as before, but more specific and, if possible, more emphatic. Beginning with the statement that the American game of football as now played is wholly unfit for colleges and schools Mr. Eliot enters eight specific indictments against it, which may be briefly summarized as follows:

"(1) It causes an unreasonable number of serious injuries and deaths; not one in five of the men that play football several seasons escape without injury properly called serious, and of the twenty to thirty picked players who play hard throughout a season hardly a man escapes serious injury. The public has been kept ignorant concerning the number and gravity of these injuries, the prevailing practice among coaches and players having been to conceal or make light of the injuries sustained.

"(2) Violations of the rules of the game by coaches, trainers and players are highly profitable, and are constantly perpetrated by all parties.

"(3) In any hard-fought game many of the actions of the players are invisible to the spectators, and even to the referee and umpire; hence much profitable foul play escapes notice.

"(4) The game offers many opportunities for several players to combine in violently attacking one player.

"(5) There is no such thing as generosity between combatants, any more than there is in war.

"(6) Acts of brutality are constantly committed, partly as results of the passions naturally aroused in fighting, but often on well-grounded calculations of profit towards victory.

"(7) As a spectacle, for persons who know what the game really is, football is more brutalizing than prize-fighting, cock-fighting, or bull-fighting. Regarded as a combat between highly trained men, the prize ring has great advantages over the football field; for the rules of the prize ring are more humane than those of football, and they can be, and often are, strictly enforced. There are no secret abominations as in football. Yet prize-fighting is illegal.

"(8) The game sets up a wrong kind of hero — the man who uses his strength brutally, with a reckless disregard both of the injuries he may suffer and of the injuries he may inflict on others. That is not the best kind of courage or the best kind of hero.

"All these evils of football have now descended from the colleges into the secondary schools, where they are working great moral mischief. It is clearly the duty of the colleges, which have permitted these monstrous evils to grow up and become intense, to purge themselves of such immoralities, and to do what they can to help the secondary schools to purge themselves also. Intercollegiate and interscholastic football ought to be prohibited until a reasonable game has been formulated and thoroughly exemplified in the practice of individual institutions. It is childish to suppose that the athletic authorities which have permitted football to become a brutal, cheating, demoralizing game can be trusted to reform it."

The Medical Visitor reported ten deaths among students in the Cambridge departments of the University, which means among about 4,400 individuals; of which eight were by disease and two by accident. The use of the Stillman Infirmary, and especially of the wards, is steadily increasing. The new system of charging each student in the Cambridge departments four dollars a year as an infirmary fee, this entitling him to a fortnight's treatment at the infirmary, encourages such a tendency. The finances of the infirmary are now on a satisfactory basis.

On turning to the Medical School we learn that there was, as in the period covered by the preceding report, a considerable deficit and there is

likely to be a deficit again next year. The current year will probably be the last to be spent in the present building. It is not possible to determine now how much of the great gifts made to the Medical School undertaking as a whole in 1901-03 will remain as an endowment for maintenance. The president remarks that the undertaking was conceived on a large scale, and with more regard to future needs and opportunities than is usual in university enterprises.

A free elective system with a considerable range of options has been adopted and has gone into force during the current year. In regard to this change the dean tells us that the advocates favored it for two reasons: some thought it would be advisable to allow students who had made up their minds to go into some special, rather than general, practice, to prepare themselves in the branches to which they intended to devote their lives; others thought that students who preferred laboratory to clinical courses should be allowed to select work along those lines. Those who were not in favor of the change opposed it from the standpoint that four years was not too long a period to be devoted to a required course, and that a student should not be allowed to make any departure from the regular curriculum until he had received his degree.

The choice of studies actually made by the students is, therefore, especially interesting. A careful examination of a table compiled from this point of view shows that, with an unlimited choice of subjects for the coming year, the students have practically chosen to continue the same work which was heretofore required. They have not elected specialties and have shown no desire to select laboratory in preference to clinical work. In other words, they have shown that they prefer to continue their preparation for the general practice of their profession.

There has been a very decided increase in the number of summer and graduate courses taken, and in the number of students availing themselves of the instruction offered in these two departments of the Medical School during the past year. In connection with the summer work attention is called to the fact that the students in attendance came from twenty-nine different states in the Union, the District of Columbia, Australia, China and Canada.

If properly fostered it would seem as if, with the new arrangements, a very considerable immediate and steady expansion in the attendance upon these graduate and summer courses might be confidently anticipated.

The activity in medical research has been fully maintained in all of the laboratories by both teachers and students as is shown by the long list of publications reported.

The Dental School is extending and enlarging its work in several directions and having purchased a lot of land adjoining the land of the Medical School is now at work endeavoring to raise money to provide for an endowment and to pay the cost of a new building for which plans have been prepared.

THE PUBLIC AND THE MEDICAL PROFESSION.

It is at times well to know what others think of us. The medical profession has always had its share of criticism, both friendly and otherwise, and we are glad to make note of a still further admonition from ex-President Grover Cleveland. At the recent centennial exercises of the State Medical Society of New York, held in Albany, Mr. Cleveland gave the principal address. The burden of his remarks was that physicians should take patients more into their confidence. He divided humanity into two unequal sections, one composed of the doctors, and the other including the millions of their actual or prospective patients. He appeared for the latter section and maintained that the tendency of the other had been to curtail freedom of thought and considerate hearing, to which the majority, he held, was entitled. He made a plea for less mystery and aloofness on the part of physicians; he cast a slur, we think with some justice, upon the still prevalent pigeon Latin and ponderous terms in use for diseases which might be designated more simply. We do not, however, follow him when he says that recent discoveries have led to additional mystery and additional inclination on the part of the doctors to "stately superiority." Carrying the argument further and recognizing the advance which has been made in medical knowledge, and the self-sacrificing work of many practitioners, he felt that the laity also had increased in knowledge and should be treated accordingly. The patient should be taken into closer comradeship; he should be allowed to know many things about his illness, which it is claimed is denied him at present, and there should in general be greater publicity between physician and patient. The growth of the nostrum evil he likewise attributes to the failure of physicians to enter into close personal relationship with their patients. Mystery should be avoided and remedies and treatment more frankly discussed.

Coming from such a source the foregoing remarks are both instructive and salutary. To much that Mr. Cleveland says we unhesitatingly agree. We are, however, inclined to think that were he standing on the other side he would appreciate some of the difficulties against which the medical profession has to contend and which are too frequently misinterpreted by the laity. The relation between physician and patient has been a gradual evolution and is unquestionably quite different now from what it was thirty or forty years ago. The mystery surrounding disease and its cure is being laid aside just as rapidly as the education of the public permits. No better example of this could be offered than the recent publicity given to the whole subject of tuberculosis. It would, however, not conduce to the advantage of either patient or physician if in the present state of progress diseases were discussed publicly, the understanding of which depends upon special training. Furthermore, the relation of the physician to the patient is so purely a personal matter that generalizations should be made with much caution. It is not difficult to understand that Mr. Cleveland's relation, for example, to his physician may, and, in fact, must, be very different from that of some other person of a wholly different grade of intelligence. Physicians of any experience quickly learn that no two patients can be treated exactly alike and that confidential relations must vary widely with the individual. In general, however, Mr. Cleveland has well expressed a situation which is of equal interest to physician and layman. He is right in his opinion that a greater degree of sympathetic confidence should exist between the two classes in the community; he is wrong, we think, in supposing that this is not coming to be the fact, and is equally in error in supposing that with the advance of medical knowledge a greater aloofness is developing between physician and patient.

MEDICAL NOTES.

ENCOURAGEMENT ONE THIRD THE BUSINESS OF THE PHYSICIAN. — Dr. Richard C. Cabot of Boston, in a suggestive article in *Charities*, in which he described the impotency of the physician to affect through his technical skill or knowledge much that he would like to do, has this suggestive opinion to record: "Encouragement is one third the business of the physician, but if it is to be permanent and not a mental cocktail, we must give the patient good reason for being encouraged, which usually means religion or its equivalent."

He then adds the significant admission: "It is the disregard of these facts that has sent so many patients away from physicians and into the hands of Christian Scientists and mental healers." — *The Congregationalist and Christian World*.

ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH. — The Rockefeller Institute for Medical Research purposes to award for the year 1906-07 a limited number of scholarships and fellowships for work to be carried on in the laboratories of the Institute in New York City, under the following conditions: The scholarships and fellowships will be granted to assist investigations in experimental pathology, bacteriology, medical zoology, physiology and pharmacology, and physiological and pathological chemistry. They are open to men and women who are properly qualified to undertake research work in any of the above mentioned subjects and are granted for one year. The value of these scholarships and fellowships ranges from six hundred to one thousand dollars. It is expected that holders of the scholarships and fellowships will devote their entire time to research. Applications accompanied by proper credentials should be in the hands of the secretary of the Rockefeller Institute, L. Emmet Holt, M.D., 14 West 55th Street, New York City, not later than April 1, 1906. The announcement of the appointments is made about May 15. The term of service begins preferably on Oct. 1, but, by special arrangement, may be begun at another time.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, Feb. 7, 1906, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 46, scarlatina 29, typhoid fever 5, measles 202, tuberculosis 50, smallpox 0.

The death-rate of the reported deaths for the week ending Feb. 7, 1906, was 21.38.

BOSTON MORTALITY STATISTICS. The total number of deaths reported to the Board of Health for the week ending Saturday, Feb. 3, 1906, was 233, against 213 the corresponding week of last year, showing an increase of 20 deaths and making the death-rate for the week 20.42. Of this number 125 were males and 108 were females; 228 were white and 5 colored; 147 were born in the United States, 83 in foreign countries and 3 unknown; 47 were of American parentage, 156 of foreign parentage and 30 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria,

38 cases and 4 death; scarlatina, 27 cases and 1 death; typhoid fever, 8 cases and 2 deaths; measles, 203 cases and 2 deaths; tuberculosis, 49 cases and 30 deaths; smallpox, no cases and no deaths. The deaths from pneumonia were 38, whooping cough 2, heart disease 30, bronchitis 5 and marasmus 4. There were 8 deaths from violent causes. The number of children who died under one year was 36; the number under five years, 59. The number of persons who died over sixty years of age was 62. The deaths in public institutions were 82.

There were 2 deaths and no cases reported from cerebrospinal meningitis during the week.

DR. McLEOD NO LONGER A MEMBER OF THE MASSACHUSETTS MEDICAL SOCIETY. Dr. Percy D. McLeod, recently brought into prominence through his connection with the so-called "suit case mystery," has been found by the Trial Board of the Massachusetts Medical Society to be guilty of conduct unbecoming a member of the society. The penalty for this offence is expulsion from the society.

FEES OF MEDICAL EXAMINERS. — A committee consisting of Drs. T. W. Twitchell, E. H. Thompson and F. E. Jones, appointed at the annual meeting of the Massachusetts Medico-Legal Society to investigate the fees paid to medical examiners in cases of homicide in the various courts of this state, reports as follows:

That letters requesting information in this matter were sent to the presiding justice of each municipal, police and district court, and to each district attorney in this commonwealth, in all numbering seventy-six; that fifty-five replies have been received; that in the eight municipal courts no fees are paid to medical examiners, who receive an annual salary in these districts, that replies from eight police courts show that four have had no homicide in their jurisdiction. Two allow fifty cents per day and mileage. In one the medical examiner's bill for service in court is sent to the county. In one five dollars is allowed for each day's attendance either at the inquest or trial, that replies from thirty-two district courts show that fifteen allow the ordinary witness fee, fifty cents per day and mileage. Five report no cases in their jurisdiction. Two report that they allow an ordinary witness fee and a special fee commensurate with time taken of an expert testimony given.

One reports allowing two dollars for attendance per day at the inquest and one and one-half to three dollars for attendance per day at the trial.

One reports allowing two dollars for attendance per day for any service in his court. One reports allowing three dollars for attendance per day for any service in his court. Three report allowing five dollars for attendance per day for any service in their court. One reports allowing three or five dollars for attendance per day at the inquest and ten dollars per day for trial. Two report allowing ten dollars for attendance per day for either inquest or trial. One reports allowing any reasonable fee for attendance in his court.

Replies from seven district attorneys show that two have no uniform fee for attendance per day on the grand jury or the criminal court; one allows ten dollars fee for attendance per day on the grand jury and twenty-five dollars at the criminal court; one allows fifteen dollars for attendance per day on the grand jury and twenty-five dollars at the criminal court; one allows a discretionary fee, about twenty-five dollars; one allows ten dollars for attendance per day on either court; one allows fifteen dollars for the first day, then ten dollars and in cases of consultation twenty-five dollars.

The committee also reports that in their opinion, the equalizing of these rates can be best obtained if each medical examiner in such districts where the fee allowed is unreasonably low would personally show the justices and district attorneys of these districts the report of the committee, and intimate that the practice of allowing a special fee in such cases is lawful and common and proper.

NEW YORK.

BEQUESTS TO HOSPITALS. — By the will of the late Mrs. Sarah McLean Abernethy the sum of \$5,000 is left to the Woman's Hospital, to endow a bed, and by the will of Jacob Hoffman, \$500 each to the German Hospital and Dispensary and St. Francis Hospital.

UNITED CHEMISTS COMPANY. — "The United Chemists Company" has been incorporated in New Jersey with a capital of \$10,000,000, and its object is stated to be to do in the retail drug trade in New York City what the United Cigar Stores Company has done in the tobacco trade. The company's charter permits it to operate pharmacies only in cities with a population of one million or more, and its territory is, therefore, restricted to New York, Chicago and Philadelphia.

BOARD OF ESTIMATE AND APPORTIONMENT. — At a meeting of the Board of Estimate and Apportionment held Feb. 2 the City Health Depart-

ment received an appropriation of \$10,000 for the continuance of its medical commission for the investigation of acute respiratory diseases, and \$5,000 for its cerebrospinal meningitis commission. In addition, \$35,000 was appropriated for expenses in connection with the prevention and treatment of diphtheria, \$15,000 for the maintenance of the tuberculosis clinic in Manhattan, and \$10,000 to provide additional nursing facilities.

MAGIC-MECHANICO-PHYSIOLOGICAL BOOTS. — The New York County Medical Society, through its counsel, is still vigorously carrying on its warfare against quacks. On Jan. 31 "Professor" Matthew H. Hilgert and his chief assistant, Albert Whitehouse, an osteopath, were arraigned before Magistrate Pool in the Jefferson Market Police Court on charges of practising medicine without a license, and held in \$500 bail each. These men have been engaged in the flourishing business of selling "magic-mechanico-physiological boots," advertised to cure locomotor ataxia, hip-joint disease, Pott's disease, gout, rheumatism, sciatica and various other affections, and it is stated that in some instances as high as \$5,000 has been paid for a pair of these wonderful boots. The attention of Mr. Andrews, counsel for the Society, was first called to the practices of the defendants a short time since by the mother of a nine-year-old boy suffering from hip-joint disease. She had been induced to consult "Professor" Hilgert for her son, and under his treatment he had grown steadily worse, until he is now in a very critical condition. The complainant in the present prosecution is the father of a little girl suffering from spinal disease who has been for some time under Hilgert's treatment.

Obituary.

ERNST ZIEGLER, M.D.

IN the death of Prof. Ernst Ziegler, which occurred recently, scientific medicine loses a valuable exponent. He was born in the neighborhood of Berne, Switzerland, in 1849, and studied medicine at Berne and also at Würzburg, finally taking his doctor's degree at Berne in 1872. He soon after qualified as privatdozent at Würzburg and after remaining there three years went to Freiburg in Breisgau as assistant and later as extraordinary professor. In 1881 he filled the chair of pathology and morbid anatomy at Zürich, in 1882 he went to Tübingen in a similar capacity and in 1889 returned to Freiburg, where he remained as professor of pathology up to the time of his death.

He was a prolific writer and investigator, concerning himself particularly with the subjects of tuberculosis, inflammation, neoplasms and rickets. This work may be found in various periodicals and gathered together in systematized form in his well-known textbook on general and special pathology, which was first published in 1881. It is through this latter work that he is chiefly known to American students. An excellent English translation has been in use for a number of years and as a comprehensive textbook of general and special pathology, the work has maintained the high place which it gained for itself immediately upon its publication. Ziegler was an unusually prolific contributor to medical periodical literature, and was the editor of two of the most important publications on pathology in Germany, the *Beiträge zur allgemeinen Pathologie und pathologischen Anatomie* and the *Zentralblatt für allgemeine Pathologie und pathologische Anatomie*. At the time of his death he was engaged in the revision of the special pathology of his textbook, which it is said is so far advanced that with slight further revision it may be printed as essentially the final expression of his opinion. He was popular as a man, lucid as a lecturer, and for many years had gathered about him students from the most diverse countries.

Miscellany.

A TRIBUTE TO PROF. E. S. WOOD.

The following tribute to the late Prof. E. S. Wood, of the Harvard Medical School, is taken from the annual report of the president of Harvard University:

Edward Stickney Wood, professor of chemistry in the Medical School, died on the 11th of July, 1905, in the sixtieth year of his age. Dr. Wood was appointed assistant professor of chemistry in 1871, and at the end of his five-year term as assistant professor he was promoted to be full professor, being at the time thirty years old. He had received a very thorough training in medicine, having cherished a definite purpose to be a physician even before his entrance into Harvard College. When he entered on his duties as assistant professor, the Medical School was supplying instruction in general chemistry, and Professor Wood for years gave much of this elementary instruction; but he gradually developed valuable courses in medical chemistry proper, and before his death had seen all the resources of his department in the school devoted to that subject. As a teacher he was clear, systematic and convincing. He bore a large part during the last thirty years in improving the teaching of chemistry as applied by medical practitioners and health officers, and he repeatedly served on public commissions in which a medical and chemical expert was needed. His most useful public service, however, was as an expert witness in murder trials. He had a remarkable knowledge of poisons and of the means of detecting their presence in the human body

and had also made a very careful study of blood stains. As a witness he was quiet, imperturbable, and evidently concerned only to declare the truth. His character, quite as much as his knowledge and skill, lent weight to his testimony. His professional career covers a period during which the chemical means of diagnosis in disease were greatly enlarged and improved. The new means Professor Wood placed before the successive classes of medical students with steady earnestness and success.

SOME OBSTETRICAL METHODS PRACTISED IN THE PHILIPPINES.

WILLIAM DUFFIELD BELL says that the belief that the women of semicivilized races escape many of the pangs of childbirth is certainly erroneous regarding the Philippine natives. The life of the Filipino woman is comparatively short, due to her many pregnancies, much manual labor, insufficient food, and, most of all, to the crude, brutal and ignorant practices employed as obstetric aids. The two chief procedures used to facilitate expulsion of the fetus consist first, in a stout band of cloth passed about the woman's abdomen and pulled tight by four persons, who are seated, two on each side of the patient, with their feet against her body, and second, in a plank six or eight feet long by a foot wide, which is placed across the woman's abdomen while another person, mounted on the plank, rises on his toes and lets the heels descend forcibly. The birth of the child is followed by the expulsion of the placenta by the above means, and, should the process be delayed, forcible traction on the umbilical cord is made to such an extent as to tear away portions of the placenta, and often large sections of this body are left to find their way from the uterine cavity of their own accord. Weeks and even months later the results of such practice are noticed in the septic conditions which would naturally follow retention of the membranes. The author gives some statistics showing the frequency of complications attending or following this crude midwifery, and then describes a case of imperforate hymen in a young girl. On account of the tumor caused by the accumulated blood she was supposed to be pregnant and was subjected to both the cloth and the plank treatment. She was then brought to the author, who incised the occluding membrane and liberated two quarts and four ounces of thick, offensive menstrual blood. *Medical Record*, Jan. 27, 1906.

THE ARCTIC CLIMATE

F. S. S. Washington, D. C. (*Journal A. M. A.*, Feb. 3) describes and illustrates by a chart and photographs the advantages of the arctic climate for the relief of chronic affections, particularly tuberculosis. The continuous sunshine and its marked effect on animal and vegetable life in these regions during the summer months as

well as its increased actinic quality, the dustless and germ-free atmosphere, and the effect of the sea air under these conditions are all noted as factors in causing the special salubrity for respiratory affections. He sums up the merits of the arctic climate for this class of cases as threefold: "First: It holds absolutely nothing to add fuel to the existing flame. There is no dust to irritate tissues already struggling against a present mastery of the disease, no superadding of pus or other infections, no contracting of colds to invite a setback, nothing to depress vitality. Second: It holds every incentive to an increase of bodily vigor. Each and every chance and opportunity for a cure which is here sought for and obtained only singly and indifferently is there grouped together in full intensity without the necessary presence of any disadvantageous element. Third: As a result of this dual combination, a beginning tuberculous process may be checked in the shortest space of time, and not so much local damage will be done, while waiting for the tide to turn and recovery to begin. This will lessen the chances of a new infection occurring after a cure." He believes there is a chance here for benevolent enterprise with a surety of results.

INTERNATIONAL LARYNGO-RHINOLOGICAL CONGRESS.

TÜRK AND CZERNIAK'S MEMORIAL FESTIVAL, VIENNA, 1908.

FROM the Wiener karyngologische Gesellschaft we receive the announcement that, as in 1908 fifty years will have passed since the clinic of laryngology and rhinology was established in Vienna by Türk and Czerniak, it may be taken for granted that all specialists belonging to this branch in every country will place great value on the fact that this fiftieth anniversary of an event which will always have a lasting effect upon medical science should not be ignored. Influenced by this conviction and also by local patriotic feeling the Wiener karyngologische Gesellschaft has formed the resolution of organizing in the Easter week of 1908 (*i. e.*, from Tuesday the 21st until the 25th of April, 1908) an "international laryngo-rhinological congress," in Vienna. On this festive occasion the society will avail itself of the opportunity for celebrating in a suitable and fitting manner its fifty years jubilee. Other laryngological societies are invited to take part in the congress by sending delegates.

Correspondence.

THE AMERICAN SOCIETY OF SANITARY AND MORAL PROPHYLAXIS.

Boston, Jan. 25, 1906.

Mr. Editors: We all know the proved success of a well-organized and actively and intelligently prosecuted campaign of education as a means of preventing a contagious disease, as exemplified by tuberculosis.

I wish to ask the progressive physicians of Massachusetts a question that a good many may have asked themselves already: Would not a campaign of popular education prevent the venereal diseases as it has tuberculosis? If we think it would, is it not our duty to organize and foster such a campaign? It seems to me that we need consider but three sets of facts before deciding to start such a campaign. *First:* The venereal diseases are a menace to society even greater than tuberculosis on account of their much greater prevalence, and the fact that by causing sterility, abortion, still-born and blighted children, who do not live to grow up or, still worse, beget tainted and degenerate offspring, they are the strongest agents in the world to-day for race suicide and race degeneration.

Second: The false ideas on sexual hygiene almost universal among young people, their complete ignorance of the deadly nature of venereal diseases and their great prevalence, and particularly the general belief of young men that sexual intercourse is a necessity for vigorous manhood,—all this dense ignorance of sexual truth among the youth of both sexes is one of the chief causes of their reckless indulgence in promiscuous intercourse and so of their contracting venereal disease. This ignorance is clearly due to the fact that our present system of education both at home and at school is so incredibly stupid that we leave our children in total darkness concerning the laws governing their most vital and fundamental function, reproduction, and let them pick up and believe any lies and morbid ideas on sexual matters that they may find on the streets and from quacks' and patent medicine advertisements. Fournier, the great French syphilographer, Dr. Morrow of New York, and a great many other authorities on venereal diseases have declared that true education of the young in sexual hygiene, which among other things would teach young men that sexual intercourse outside marriage was not at all necessary for vigorous health, but on the contrary inimical to it because of the great danger of injury from excess and from venereal disease,—that such teaching would be the most effective means possible of preventing venereal disease.

Third: Before this much needed reform in education can be introduced, the medical profession, which alone sees the necessity of it as yet, must awaken the teachers, the clergy, and all intelligent people to demand it; and it is clearly the duty of the physicians to do this service to society.

Can there be a single citizen of Massachusetts, be he a physician or not, aware of the terrible results of these diseases, especially in marriage, and the great number of wholly innocent women and children who are struck down by them, who is not ashamed that his state and country allow these horrible scourges to ravage her citizens unchecked? Will he not demand that these plagues be fought in every possible way, and will he not be ready and eager to help in educating the people, especially the young who are in the greatest danger, concerning the true nature of these diseases and the only sure way to prevent them?

Taking it now for granted that we want to educate the people in sexual hygiene and disease, how shall we set about it? Fortunately we have the example of France to look to, where for many years there has been an organization founded for this very purpose by the leading physicians of Paris and called "The Society of Sanitary and Moral Prophylaxis." This society has the active support of Fournier and all the other specialists in venereal diseases in Paris and also a great many prominent men throughout France among both physicians and laymen; it holds frequent meetings, and publishes a monthly bulletin. It has also published a number of educative pamphlets written in simple language for the working-class young men and women. The Boston Medical Library has this monthly bulletin for 1904, in which you may find a full account of the work and methods of this society. There are such societies also in Germany, Holland and other European countries, all having the same name, the same aim, and the same or similar methods. Two international congresses for the prevention of syphilis and venereal diseases have been held at Brussels; every nation of the civilized world was represented. At the last meeting of this congress the delegates decided to organize societies in every country where they did not already exist, to be called Societies of Sanitary and Moral Prophylaxis. The object of these societies should be "to

study the best means of every order — moral, legislative and social as well as medical — to be employed in the prevention of these diseases."

Dr. Prince A. Morrow of New York, an eminent specialist in genito-urinary diseases, whose recent book on "Social Diseases and Marriage" you may have read, was delegated by this congress to form one of these societies in the United States. In spite of Dr. Morrow's high standing and great influence among his colleagues and also with other leading men in New York, he found such a general lack of appreciation of the importance of the subject, and fear of injuring one's standing by identifying oneself with such an unmentionable subject, that it was only with the greatest difficulty, and by continually laying stress on the humanitarian side of the problem that he and his co-workers finally succeeded in enlisting the support of one hundred and twenty-five of the best physicians in New York, and a few broad-minded and humane clergymen and laymen, and founded last February the American Society of Sanitary and Moral Prophylaxis.

I can best show you the aims of this society by quoting some of the articles from its constitution:

ARTICLE I. The headquarters shall be located in the United States with branches in other cities of the United States.

ARTICLE II. The object of this society is to limit the spread of diseases which have their origin in the social evil. It proposes to study every means — sanitary, moral and administrative — which promises to be most effective for this purpose.

ARTICLE III. This society is to be composed of members of the medical profession and of the laity, including women.

Let me supplement these extracts by a few quotations from Dr. Morrow's inaugural address. "In answer to the question continually asked of members of the society, 'Do you aim at the regulation of vice?' he says, 'This society does not embrace in its objects the legalization or prostitution or the sanitary surveillance of prostitutes with a view to making prostitution safe. Prostitutes should be treated and cured, if possible, like all victims of these diseases; but the state, in issuing a certificate of health which is equivalent to a license to practise this vocation, proclaims the doctrine unhygienic as it is immoral that debauchery is a necessity for men.' The key to the solution of this problem is not to make prostitution safe, but to prevent the making of prostitutes. From this point of view the study of the underlying causes, the bad social conditions, of which prostitution is largely the product, would properly come within the scope of this society's work."

"The evil of prostitution can never be corrected so long as the morals of young men are considered a negligible quantity, and the 'sowing of wild oats' is recognized as a harmless and pardonable pastime."

Such in outline are the aims and spirit of the American Society of Sanitary and Moral Prophylaxis. It holds meetings twice a month at the Academy of Medicine in New York. At the meeting on Dec. 14 four papers were presented as follows:

1. Should education in sexual matters be given to the great body of the young men of the working classes? — F. Duncan Huley, M.D.

2. Should this instruction be individual or collective, through pamphlets, tracts, lectures, talks to young men, etc.? — Rev. John J. Wayne, S. J. and Prof. E. N. Searley of the International Y. M. C. A.

3. What social groups and agencies whose work brings them in direct contact with the living conditions of the people may be utilized for this educational work? — Dr. David Blaustein, superintendent of the Educational Alliance.

4. Should this education be extended to the young women of the working classes? — Margaret Claverie, M.D.

These papers were followed by a general discussion by prominent members of the laity and medical profession.

It seems to me that this society in New York has shown us physicians of Massachusetts very clearly how to set about this delicate and important task of educating the public concerning sexual hygiene and diseases, and that we should lag no longer behind our more progressive colleagues, but follow their good example by getting together

and organizing a Massachusetts branch of the American Society of Sanitary and Moral Prophylaxis without delay.

All physicians of this state who respond to this appeal, and wish to help in the organization of a branch of the American Society here in Boston, will help greatly toward that end by sending their names and addresses to the writer at 87 Montclair Avenue, Roslindale, Mass.

Very truly yours,

Wm. L. Holt, M.D.

CHARLES E. BUCKINGHAM, M.D. "ERRORS IN THE HARVARD MEDICAL SCHOOL HISTORY."

AN ANSWER TO THE AUTHOR OF THE HISTORY.

Boston, Feb. 5, 1906.

Mr. Editor: A letter of mine in the *JOURNAL* of Jan. 25 has called out one in the issue of Feb. 1 from Dr. T. F. Harrington, the author of the History of the Harvard Medical School. If I understand him, he disclaims the offensive meaning which I had put upon his words in the biography of the late Charles E. Buckingham. So far, this is satisfactory. As his words were understood by others as they were by me, it seems proper that he should place an explanatory note on page 867 in such copies as are still unsold.

The other correction that I made was in the article on the *Boylston Medical School*. My sole aim was to show that that school was not injured in any degree by the withdrawal of Dr. Buckingham, because he did not withdraw, and that his relations with Harvard did not affect the *Boylston School* because they did not begin until ten years after its close. This I showed by facts, dates, references. In return, I got generalization, assertion, absence of proof, and there is now introduced, not the statement but the wholly unwarranted implication that there was some relation between him and Harvard previous to his election by the Corporation. This is not true. I it means anything, it means that he gave instruction to Harvard at the House of Industry. But he resigned from that hospital within a few weeks from the time when the *Boylston School* closed, as is shown by his publishing cases in your *Journal* of April 12, 1855, as "formerly Physician to the House of Industry."

He gave some clinical lectures at the Boston City Hospital when that was opened, nine years later, but they were not for any school. He himself told me that it was after these lectures that he was offered a Harvard appointment, and that in view of the possible results, he had seen fit, before accepting, to consult the then new City Hospital staff.

I think that the author should therefore make a correction on page 505.

Very truly yours,

EDWARD M. BUCKINGHAM, M.D.

OPEN-AIR TREATMENT OF TUBERCULOSIS.

SOUTH BOSTON, MASS., FEB. 4, 1906.

Mr. Editor: The title to Dr. T. F. Harrington's recent paper, "Open Air Treatment of Tuberculosis," in the *Wellfleet Convalescent Home*, with a list of Dr. Harrington's Permanent Cured Cases, published in the *JOURNAL*, is misleading. One would naturally infer from it that the cases reported were treated by the open-air method and in the *Wellfleet Home*. In point of fact, none of the cases were treated by the open-air method in the *Wellfleet Home*. However, the *Journal* of the *American Medical Association* has been misled by taking it for granted that the above cases were treated in the *Wellfleet Home*, and it is regrettable that the leading journal in the current literature of medicine has been misled in this manner. The *Journal* of page 385, Dr. Bradley's paper on tuberculosis, is correct, and it is regrettable that it is so easily misled by error.

Very truly yours,

EDWARD A. LEE, M.D.

RECORD OF MORTALITY

FOR THE WEEK ENDING FEBRUARY, JAN. 27, 1906.

| CITIES. | Reported deaths in each. | Deaths under five years. | CITIES. | Reported deaths in each. | Deaths under five years. |
|-----------------------|--------------------------|--------------------------|-----------------------|--------------------------|--------------------------|
| New York | 1,446 | 441 | Quincy | 6 | 1 |
| Chicago | 504 | 140 | Waltham | 16 | 1 |
| Philadelphia | 583 | 181 | Worcester | 1 | 1 |
| St. Louis | — | — | Pittsfield | 2 | 1 |
| Baltimore | 212 | 58 | Brockline | 4 | 4 |
| Cleveland | — | — | North Adams | 5 | 1 |
| Buffalo | — | — | Chicopee | 7 | 1 |
| Pittsburg | — | — | Northampton | 6 | 1 |
| Cincinnati | — | — | Medford | 1 | 1 |
| Milwaukee | — | — | Beverly | 3 | 3 |
| Washington | — | — | Hyde Park | 1 | 1 |
| Providence | 59 | 15 | Newburyport | 4 | 0 |
| Boston | 212 | 60 | Leominster | — | — |
| Worcester | 41 | 21 | Melrose | 4 | 0 |
| Fall River | 40 | 14 | Woburn | 4 | 1 |
| Cambridge | 76 | 10 | Marlborough | 3 | 2 |
| Lowell | 34 | 10 | Westfield | 1 | 1 |
| Lynn | 31 | 8 | Peabody | — | — |
| New Bedford | 14 | 5 | Revere | 1 | 1 |
| Springfield | 18 | 2 | Clinton | 4 | 1 |
| Lawrence | 30 | 12 | Attleborough | — | — |
| Somerville | 19 | 6 | Adams | — | — |
| Holyoke | 19 | 12 | Gardner | 3 | 1 |
| Rockton | 9 | 2 | Milford | — | — |
| Malden | — | — | Weymouth | 3 | 2 |
| Salem | 9 | 5 | Framingham | 2 | 2 |
| Chelsea | 15 | 2 | Watertown | 3 | 1 |
| Haverhill | 19 | 5 | Plymouth | — | — |
| Newton | 9 | 3 | Southbridge | 3 | 2 |
| Fitchburg | 7 | 2 | Wakefield | 3 | — |
| Taunton | 12 | 1 | Webster | — | — |
| Everett | 8 | 4 | | | |

SOCIETY NOTICES.

BOSTON MEDICAL LIBRARY MEETINGS IN CONJUNCTION WITH THE SUFFOLK DISTRICT BRANCH OF THE MASSACHUSETTS MEDICAL SOCIETY.—Medical meeting, Wednesday, Feb. 14, 1906, at 8.15 p.m., John Ware Hall. Subject: "The Military Hygiene of the Japanese Army," Capt. Charles Lynch, United States Army. Military Surgeons are especially invited to attend. Light refreshments will be served after the meeting.

GEORGE W. GAY,
ELLIOTT P. JOSLIN,
JOSHUA C. HUBBARD,

Committee on Medical and Social Meetings.

NEW ENGLAND HOSPITAL MEDICAL SOCIETY.—The regular meeting of the New England Hospital Medical Society will be held at Hotel Nottingham Thursday, Feb. 15, at 7.30 p.m. Section of Pediatrics. Dr. Mary F. Hobart, chairman. Paper, "Tetany in Young Children in America," by Dr. Annie S. Daniell, formerly Professor of Pediatrics in the Woman's Medical College of the New York Infirmary.

BLANCHE A. DENIG, M.D., Secretary.

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING FEBRUARY 3, 1906.

G. ROTHGANGER, surgeon. Detached from the naval hospital, Norfolk, Va., and ordered to the naval hospital, New York, N. Y.

A. FARENHOLT, surgeon. Detached from the "Raleigh" and ordered to the "Oregon."

G. F. FREEMAN, passed assistant surgeon. Detached from the naval station, Cavite, P. I., and ordered to the "Raleigh."

L. H. WHIFLER, assistant surgeon. Ordered to the naval station, Cavite, P. I.

P. M. RIXEY, surgeon general. Commissioned surgeon general and chief of the bureau of medicine and surgery, Navy Department, with the rank of rear admiral, from Feb. 5, 1906.

JAMES D. GATEWOOD, surgeon, U. S. Navy. Designated by the acting secretary of the Navy is detailed as a member of the joint board of medical officers of the army and navy, appointed by orders of Jan. 11, 1906, War Department, to consider improvements in the first aid dressings and uniformity of equipment for the medical departments of the two services, vice Surgeon CHARLES F. STOKES, U. S. Navy, relieved. War Department, Jan. 21.

BOOKS AND PAMPHLETS RECEIVED.

A Case of Visual Hallucinations and Crossed Amblyopia with Vascular and Degenerative Lesions in the Calcarine Cortex and Other Portions of the Occipital Lobe; also with Atrophy of the Pregeniculate and Optic Tracts. By Charles K. Mills, M.D., and C. D. Camp, M.D. Reprint.

The Principles of Bacteriology: A Practical Manual for Students and Physicians. By A. C. Abbott, M.D. Seventh edition, enlarged and thoroughly revised. Illustrated. Philadelphia and New York: Lea Brothers & Co. 1905.

The Cure of Femoral Hernia. Results of One Hundred and Ten Operations by a Single Method. By William Burton de Garmo, M.D. Reprint.

Report of the Surgeon-General of the Army to the Secretary of War for the fiscal year ending June 30, 1905. Washington, D. C.

Manual of Operative Surgery. By John Fairbairn Binloe, A.M., C.M. (Aberdeen). Second edition, revised and enlarged. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1905.

A Manual of Diseases of the Nose and Throat. By Cornelius Godfrey Coakley, A.M., M.D. Third edition, revised and enlarged. Illustrated. New York and Philadelphia: Lea Brothers & Co. 1905.

Mt. Sinai Hospital Reports. Volume IV. For 1903 and 1904. Edited for the Medical Board by N. E. Brill, A.M., M.D.

On Becoming Blind. Advice for the Use of Persons Losing their Sight. By Dr. Emile Javal. Translated by Carroll E. Edson, A.M., M.D. New York: The Macmillan Company. 1905.

Manual of Chemistry. A Guide to Lectures and Laboratory Work for Beginners in Chemistry. A Text-Book Specially adapted for Students of Medicine, Pharmacy and Dentistry. By W. Simon, Ph.D., M.D. Eighth edition, thoroughly revised. Illustrated. Philadelphia and New York: Lea Brothers & Co. 1905.

A Treatise on the Nervous Diseases of Children for Physicians and Students. By B. Sachs, M.D. Second edition, revised. Illustrated. New York: William Wood & Co. 1905.

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Address.

THE PROBLEM OF PSYCHIATRY IN THE FUNCTIONAL PSYCHOSES.

BY EDWARD COWLES, M.D., BOSTON.

(Concluded from No. 6, p. 152.)

MENTAL PHYSIOLOGY AND THE FUNCTIONAL PSYCHOSES.

THE true basis of a pathological physiology in psychiatry is mental physiology and its physical correlations of function; variations of nervous and mental reactions in their initial stages may be wholly functional. Approaching the subject newly from this point of view the physician is assumed to know the modes of reaction of the nervous and mental mechanisms and that part of the work done by the nervous system leads to consciousness; he should know also the primary postulates of psychology. Having to study the operations of other minds, he needs to distinguish, in descriptive terms, his own conscious experiences.

A helpful method in psychiatry is to separate the experiences that relate to the outer world from those that belong to the inner life. Professor Sanford presents this idea in discussing the relation of psychology and physics, to which reference has been made. He describes the conscious experiences that may be called physical phenomena: percepts or series of percepts belonging chiefly to the sense-fields of sight, hearing and touch, including under the latter the kinesthetic senses, as well as pressure, heat and cold; he speaks of these as the senses that mediate the "life of relation" with the world outside our own bodies, — the "physical group of senses." Taste, smell, pain, the general and organic senses — all having little external reference — are not mentioned at all in physics, except incidentally. The method of psychology, on the other hand, while not essentially different, has broader outlines; its phenomena are various conscious experiences, including all those with which physics sets out, but also experiences involving pain, organic and general sensations, feelings, emotions, memories, images, volitions, processes of reasoning, and everything that belongs to such experience. Physics, dealing with outer experiences only, practically works with terms derived exclusively from the kinesthetic and a part of the dermal and visual experience in its spatial function; these are the senses capable of perceiving matter in motion, and the physicist in using their terms excludes reference to the other senses of the physical group, — sight, hearing and touch. Psychology deals with both inner and outer experiences.

This general view of mental physiology has a special value for psychiatry which it is possible here only to indicate. The conception of a relation between conscious experiences and outer physical phenomena implies an organism, with its special "physical group of senses" in touch with the outer contacts, acting as a medium of transmission between the two; this medium may be

conceived as forming also a *somatic group of senses* in the paths of communication. But this mechanism of transmission does not afford, even normally, open ways without friction or obstruction; to its report of contacts with the outer "life of relation" it adds the multitude of returns with all their variations from its own physical workings, and for this process the same mechanism of kinesthetic and other senses, in a new grouping with others, including the organic and general sensations, is used. In abnormal as well as normal conditions these returns, however imperfect, stand for the truth and the whole truth in conscious experience; in health we think as little as possible of the medium of transmission, and in all conditions of well-being or ill-being we can only describe our organic feelings in general terms. We do not recognize for the most part the sources of these sensations, yet they have a controlling influence upon our minds. These considerations indicate three groupings of the functions of the sensory mechanisms of conscious experiences: (1) The physical group of senses of the outer "life of relation"; (2) the somatic group of senses of the inner life — our conscious experiences of our own bodies; (3) the central psychical life which includes both of the other groups of conscious experiences besides those belonging distinctly to its mental aspect. The interest of this to psychiatry is that comparatively little attention has been given to this inner sensory field of the sources of conscious experiences; yet, it may be said, here are the conditions and the very material of bodily and mental stimulations and sensations with which the mental work is done. These explaining principles have been almost wholly omitted from the accepted formulae of the conceptions of modern advanced psychiatry which has chiefly concerned itself with the motor aspects of mental life and expression. These physiological references are needed to explain many of the symptoms of the psychoses and should have their full value in the formulation of the principles of mental physiology and psychiatry.

A functional conception of mental pathology²⁴ directs observation to the first and smallest departures from normal action, upon the principle that all variations of a pathological character are subject to the laws of normal function acting under abnormal conditions. The study of the development of symptoms is equivalent to noting the genesis and progress of the conflict between the functional energies and the abnormal conditions. Functional modifications, as symptoms, are the results of changes of action; organic effects are the results of changes of structure. The genetic method, the sequences of functional phenomena are noted in the functional psychoses; there are variations of function, therefore,

²⁴ Harker, L. L. *Method in Medicine*. Boston, Mass., 1903. See also *Journal of the American Medical Association*, June 20, 1905. Reference is made to a functional method of study, here it is noted that the functional method is being more widely used, and that the descriptive classification of the symptoms of the psychoses is being replaced by a classification of the functional phenomena. The author is indebted to an address by the Mr. M. J. Harker, published while this paper was in manuscript.

manifested by its reductions and recoveries. The following characterization in outline of the psychoses is an application of the functional principles referred to in the foregoing pages. For the purpose of tracing the several orders of symptom-factors from their genesis in functional sources they can be considered most simply under the divisions of the mental elements — intellect, feeling and will, as these terms are used in modern psychology for purpose of classification.

1. THE FUNCTIONAL PSYCHOSES. A study of the large group of cases of non-deteriorating mental disorder yields certain general conclusions as to what may result to the normal well-endowed individual when subjected to the effects of use, disuse, overuse and stress. Beginning with the least degrees of decline of functional vigor, below normal fatigue, there is no point in the declension where a line can be drawn definitely marking a change from one named "clinical type" to another, down to the lowest degrees of vital energy and complete loss of volitional function. Throughout all observations of these changes the essential principle of variations of irritability is never to be lost sight of, nor the fact that the first step toward deterioration of function is characterized by a rise of irritability. Another pervading principle is that among the multiple functional mechanisms failure of energy is unequal, and that changes and losses of irritability must apply as much to sensory as to motor function. The word "psychosis" can be used most profitably as correlative with "neurosis," and as including both its proper psychological and pathological meanings leaving the differentiations of sanity and insanity to be indicated by these words. A basis of inquiry, as above described, prepares the way for the examination that comes first in order of the initial departures from mental integrity, viz.: The affections called imperative and fixed ideas, and the primary asthenic conditions of neurasthenia before the after-effects of chronic states have supervened.

Insistent and fixed ideas refer to a wide range of kindred cases of affections that can happen to sound minds in persons neither temporarily nor constitutionally neurasthenic. The functional elements are normal and the affections may attain characteristic forms in normal minds; but this happens to them more readily when there is neurasthenic reduction of inhibitory energy and greater degrees of intensity and persistence occur in association with constitutional instability. All observant sane persons estimate the purposes of others by interpretations of their speech and behavior, and thereto fittingly adapt their own conduct influenced by inferences and judgments in a manner that would indicate "paranoid" suspicion under certain circumstances. Inasmuch as this is a universal, functional, self-protective principle, sane persons have normally the functional disposition to produce ideas of suspicion and persecution, but well-balanced minds control thought and speech. In *any psychosis*, however, associated with asthenic conditions there may be "paranoid forms" not belonging to that psychosis as essential to the symptom-complex; this reaction is liable to become casually intensified or further developed and fixed by habit. In many cases not "psychasthenic," nor physically neurasthenic, the affection is purely a functional accident; it may involve all forms of emotional reactions, other than "phobias," and many cases recover.

Neurasthenia, in its early conditions, uncomplicated by the effects of habit, presents the same elements, in mild degrees of functional reduction, that characterize

their greatly varied combinations in the symptom, complexes of the graver conditions of melancholia, mania and exhaustion psychosis or confusional insanity. These neurasthenic conditions may occur in all persons, under sufficient stress, but when there is constitutional weakness the power of resistance is less. The functional elements of the organism, all working together, constitute combinations of community work of extreme complexity; these elements being unequally reduced in efficiency the "clinical types" are very much varied. A method of analysis of symptoms with the endeavor to estimate their functional values and their relations to their physiological sources will appear under the following topics.

The functional psychoses constituting the main group of non-deteriorating affections pathologically regarded as insanities, all have a basis of some kind or degree of asthenic reduction of functional efficiency; as already indicated, these may include the whole range of degrees from simple cases of nervous exhaustion downward through the simple and pronounced cases of melancholia and mania, including all varieties of phases and combinations of the symptom elements; also including the more actively induced exhaustion psychoses and confusional deliria. Functionally considered, it is proper to regard all these cases as "functional psychoses" until proved to the contrary. Function comes first as the present criterion; organic change is a result. Cases carefully diagnosed characteristically tend to recovery. The designations, neurasthenia, melancholia, mania, etc., are simply valuable descriptive terms; they are thus not correct names of diseases as clinical types, and we have yet to study broadly the genesis and development of these conditions. By the functional method we have merely advanced, as yet, little beyond the general fact that two classifications may be made of the psychoses, — the non-deteriorating and the deteriorating. By the morphological, clinical-type method there is a singular lack of success in adopting principles of valuation of symptoms by which men of good minds can reach like conclusions. We are not yet ready to determine species; this should be aided by the study of the genetic character of the symptom elements.

The significance of the unifying characters of the non-deteriorating range of psychoses may be made much clearer by grouping them according to the functional sources of the symptoms and their own natures. The symptom-factors thus fall into natural groups, which should be studied with complete freedom from preconceptions of "disease-forms." No more is attempted here than to harmonize these groups with the elementary postulates of psychology, and with the general physiological facts heretofore cited.

(1) Feeling. — (The feelings and emotions.) The emotional variations that are pathologically persistent are in close relation with the changes of bodily states which are represented in the central nervous system by the organic, kinesthetic and general sensations: the sum of these has, physiologically, a strong influence upon mental feeling, and therefore in pathological conditions the emotional tone of the psychical sphere corresponds with the sense of personality by "states of mental depression" (melancholia) associated with malaise and ill-being, and "states of mental exaltation" (mania) with sense of well-being and false euphoria. The complex sources of the sense of body have been described and the changes of irritability due to fatigue and other causes; the consequent variations of the sense of physical pleasure and pain are closely connected with the rise and decline of irritability, its intensifications and losses, but not with parallel changes.

In the emotional states of "neurasthenia" the depression is variable; of "melancholia," persistent; in both the feeling-tone may be combined in various ways with the first degree of functional deterioration of irritability marked by agitation, restlessness, "irritable weakness" (psychomotor excitation), or by dullness, slowness, languor (psychomotor retardation). In nervous exhaustion and melancholia the feeling-tone is constantly influenced by bluntings and losses of organic sensation, strikingly shown in the loss of the sense of fatigue — "fatigue-anesthesia," and the various unequally distributed conditions described in the natural order of decline as hyperesthesia, hypoesthesia, paresthesia and anesthesia; also ease and obstruction of motor expression have their reflex influence upon the affective states as in a feeling of facility, or the "sense of inadequacy" and the "sense of effort."² Hopelessness, introspection, retrospection, apprehension, self-reproach, are logical consequences. All these variations are persistent intensifications and differences of the normal connections of ideas and emotions, with their correlated physical reactions; the persistence of morbid emotional reactions indicates deteriorated body states.

In the emotional states of "mania" there is the characteristic exaltation and exhilaration; but in many cases there is depression of feeling of the type shown by anger in its origin from painful states of irritation, and by distressing delusions and aggressiveness. These two prominent types of feeling-tone are associated with corresponding variations of irritability marked by its rise from moderate to high degrees of psychomotor excitation, shown mentally in "flight of ideas," corresponding to the agitation and irritable weaknesses in melancholia, — sometimes more extreme and sometimes reduced and lost. The clinical pictures in some cases may indicate a simple absence of painful irritation, but they certainly show, characteristically, the false euphoria of blunted sensations, as in alcoholic intoxication.

(2) *Intellect.* — (Sensations — perceptions and ideas.) The "thinking process," as it is rather vaguely called, may be definitely conceived to include the ideational reactions of the stream of consciousness, constituted of the association processes in combination with the inhibitory or exciting control of the will working through attention and apperception; the emotional factor enters into the combination and modifies the "thinking process" with intensifications of interest and motive influences. It is impossible to describe these function factors separately because they all work together. The character of the ideas, the sensations revived by memory in the association process, whether depressed in melancholia, or exalted in mania, is in harmony with the emotional tone as it is "lowered" or "exalted." The time element in the processes of the stream of consciousness varies with the rise in irritability and especially with the coincident reduction of inhibition. This, in mania, with the intensification due to irritability, produces "flight of ideas" with quick reactions and superficial associations. The tendency is to increasing weakness, reduction of clearness, incoherence and final arrest of mental functions in confusion or stupor. With disordered perceptions there are illusions and hallucinations; delusions arise. Maniacal states represent graver degrees of derangement than melancholia, and a lower level of functional reduction, especially of inhibition. The more profound conditions of acute exhaustion (confusional insanity, exhaustion psychosis) occur sharply by themselves from strongly exhausting influences and are varied

manifestations of delirium; these may supervene in the severer types of both melancholia and mania.

(3) *Will.* — (Inhibition — attention and apperception.) In the sense that acts of the will are such acts only as cannot be inattentively performed it produces exciting or augmenting effects in the "thinking process," or inhibiting effects; working through attention and apperception its function of control appears in voluntary inhibition, and this has been described in part in connection with the other elementary functions and in the reference to the physiological law of inhibition. Normally, inhibition, both physiological and voluntary, stands in mobile equilibrium with the tendency of all conscious and neural excitations to discharge into motor effects, open or concealed within the organism. In the incessant change and succession in the train of ideas in consciousness the attention holds the chosen or attracting idea in the interplay of neural processes and thus inhibits its tendency to pass away, other items being held with it in reasoning, and apperception being a special form of the same controlling influence. This inhibitory function is a true index of the integrity of vital energy; it is regularly reduced in efficiency with asthenic reduction of the nervous forces. Voluntary inhibition is variably reduced in neurasthenia, persistently in melancholia, and greatly so in mania with loss in delirium.

(4) *Organic Sensations and States.* — (General and kinesthetic sensations.) The importance has been shown of these function factors of the "somatic group of senses," in respect to the representations they bring into conscious experiences concerning the inner physical life of the body. In health the sensory and motor reactions of our bodies and our conscious experiences are adjusted to contacts with the environment within normal limits: the organic and kinesthetic senses normally contribute to the general welfare with only salutary interferences, and these being mostly unnoticed we habitually ignore their existence. It is in disordered physical conditions that the abnormal influences arise and interfere with and derange the experiences of the mental life; they are general and vague in character, but are of essential significance though only described as subjective experiences. The phenomena of changes of excitability and loss of function may be variously described. An interference with the functions of any one system will disturb the normal functional equilibrium that must of necessity exist in the action of the whole.³ The principle of localized variations of irritability, as in the neurones, applies to all functioning groups of cellular mechanisms; the threshold of excitation may be raised or lowered in any of the sensory, motor or central and psychical parts of the reflex mechanisms. Upon these changes may be predicated all the phenomena of psychosensory and psychomotor excitation and retardation, conditions that appear in some kind or degree in the whole range of the functional psychoses. These variations may be ascribed to reductions of the nutritional maintenance of the vital energies. Hyperesthesia and hyperkinesia are the complementary manifestations that betoken fatigue, or equivalent weakness from some cause, of the physiological inhibitory energy; this condition is often associated with anesthesia of the fatigue sense in the same case.

It should be noted that the changes of feeling tone of motility and of control do not run parallel to each other, hence the differences of the clinical pictures presented by typical melancholia and mania, and the so-called "mixed cases"; melancholia presents two principal types — emotional depression with excitation and retardation; in mania presents emotional excitation

² Cf. Cowley, E. *Op. cit.* *Neurasthenia and its Mental Symptoms*, 1891.

³ Cf. Mott, F. W. *The Degeneration of the Neurones*.

with excitation, and sometimes there are painful states of consciousness and the acute reductions of function in exhaustion and stupor. There are numerous phases in the unified melancholia and mania as constituting one general group of variations of functional disorders presenting clinical phenomena apparently widely divergent as "clinical types," but falling into harmonious relations when explained consistently with their developmental and genetic character.

2. THE DETERIORATING PSYCHOSES. These psychoses have an important relation with the *functional psychoses* that should be mentioned here. They are characterized by persistent functional deterioration and tend to dementia; this is consistent with the opposing fact that the vital energies of the life-process sometimes appear to overcome in recovery the interferences with their normal action. It has been said that the functional psychoses tend to recovery; yet the failure to recover in some cases may be consistently referred to constitutional weakness or the loss of vigor in old age. This does not imply that heredity is an essential cause of mental disease; "neuropathic" persons have less endurance against all adverse influences. Among the *deteriorating psychoses* the first place is given to a large group called "dementia precox"; its general form is not clearly differentiated, nor its special divisions; no common basis is implied in the designations hebephrenia (mental weakness), katatonia (motility disorders), paranoid forms (insistent and imperative conceptions). A single case may change from one "form" to another, and the recognition of some constant characters is required to unify all the "forms"; the common fact of dementia is shown in the deterioration of capacity that may occur in any of the functional mental elements, varied in different cases; this implies structural changes. The character of the failure is revealed in the quiescent states after the subsidence of active symptoms. The most common fact is the deep-seated deterioration of the emotional nature; hence the characteristic indifference and apathy which favors the development of habit automatisms, etc. Concerning this large group of deteriorating psychoses, regarded as above stated, and including also the few other "disease-forms" at present accepted as such, some general conclusions now appear with respect to the functional psychoses.

The unification of the functional psychoses can only be indicated here with respect to the explanations and conclusions reached during some years of teaching the principle that each of the groups conveniently designated neurasthenia, melancholia, mania, etc., simply includes variations in combinations of different degrees of functional disorder of the same physical and mental elements. The essential unity of melancholia and mania was recognized by Griesinger and others with differing explanations; modern physiology and psychology broaden and simplify the whole subject with better explanations of general principles.

In recent psychiatry there is an evident tendency to the unification of the psychoses. A significant contribution has been made by Dana;²⁷ in his large neurological experience he has seen much to favor the idea that most neurasthenias are mental cases, or non-insane psychoses; the term phrenasthenia is used for a special group of neurasthenic or degenerative

psychoses including mainly those described by Janet as psychasthenia; it is said that an innate constitutional weakness underlies all the chief non-accidental functional insanities. There is much reason for a simplifying psychiatric conception, complementary to Dana's view, that not only most, but all, functional mental cases are subjects of asthenic reduction of functional efficiency and are neurasthenic. The tendency is notable in the remarkable studies of Janet in which he reaches the conclusion by psychological analysis that many of the apparently diverse psychoneuroses may be unified under the one principle of psychasthenia; this implies a general and special insufficiency in all the phenomena and is at the same time neurasthenia; these affections represent regular degrees of lowering of functional efficiency.

The genetic method leads to a comprehensive view of all the psychoneuroses. Considered biologically and physiologically neurasthenia, phrenasthenia, psychasthenia and all the functional psychoses are modifications of functional characters. Whether these modifications were acquired newly by the individual himself, or by his ancestor and thereafter transmitted as though they were inherent variations, the problem is essentially the same. However perverted, distorted and anomalous the functional phenomena of vital activity may be, they must be traced back to the first interferences with the physiological elements to find their explanation in their genesis. We may assume that all normal adult individuals are subject to certain acquirable functional modifications,—numerous and complex, thus forming the symptom groups called neurasthenia, melancholia and mania, for example; all abnormal persons are subject not only to the same changes, but to something more and something different, and these additions may be simply special variations of intensity, or degrees of impairment, or of differences pointing to other than functional explanations. A general principle in mental pathology may be derived from these considerations. Whatever the form of a deteriorating psychosis it has its own pathological characters; but superimposed upon these symptom-factors, and relatively superficial, neurasthenic manifestations commonly appear, and there may be episodes more or less transitory, of manifestations of the functional psychoses. This occurs notably in the early stages of dementia precox and manifests the practical concurrence of two diseases, viz.: the permanent deteriorating psychosis and the transitory phases (melancholic, maniacal and paranoid) of the functional psychosis. This principle accounts also for the fact of there being maniacal as well as melancholic types, and the "paranoid conditions," in the "involution psychoses"; this principle is already well recognized in respect to the neurasthenic, melancholic and maniacal modes of onset of paresis; and to the same types of functional disorder, and tendency to obsessing suspicious and delusional ideas, in senile insanity in which active symptoms may measurably or wholly

²⁷ Dana, C. L.: The Partial Passing of Neurasthenia, BOSTON MEDICAL AND SURGICAL JOURNAL, vol. 41, 1904.

disappear. All the psychoses called functional for purposes of classification, and being nearest to normal, constitute the main division of the psychoses (considered as mental disorders); all the psychoses called deteriorating and being exceptions to the others, constitute the minor division. In these the fact that in some particulars the reductions of functional efficiency remain permanently deteriorating constitutes dementia, which implies some form of structural change, though none strictly characteristic has yet been found. The pathological principle here suggested leads to a practical method of analysis of the symptom factors of all possible forms of deteriorating psychoses. The first step is the distinction of the purely functional modifications referable to physiological sources; these relate to variations of the fundamental irritability as explanatory of changes of motility and of the sensibilities and emotional tone, all being comprehended broadly in relation with the "somatic group of senses"; closely kindred with these are the reductions of function of the processes of association, memory, attention, inhibition, etc. Holding apart these phenomena of the main division of psychoses as being included in the functional conception of their pathology, and as explainable through their genetic and developmental character, there remain, of the symptom factors of a deteriorating psychosis, those that point to the causes of the special deterioration. This helps to define the problem of research for anatomical explanations. It should not escape observation that when there is "innate constitutional weakness" in cases belonging to the main group of functional psychoses, special modifications may be noted in the symptom factors, especially of the attention and inhibition element whose reduction is the most constant and characteristic fact of constitutional insufficiency. It is in these conditions that the law of habit has its most potent and perpetuating influence.

The functional psychoses, including those answering to the definition of "a typical form of insanity," present some points of special interest when analyzed in accordance with the method and principles examined in the foregoing pages. Reference has been made to Griesinger's descriptive definitions of melancholia as "states of mental depression" and mania as "states of mental exaltation." During more than half a century these designations have held their places in psychiatry; the search for more satisfactory statements has not been altogether successful. The difference of the emotional tone is the criterion but it is not a wholly true one. The depression in melancholia is consistent because the "somatic senses" retain enough of normal function to report truly to consciousness the fact of ill-being of the body; but in mania the exaltation is not constant, the physical correlatives of the feeling-tone are more disordered by reductions and losses yielding more irritating excitations and in many cases a fictitious sense of well-being. But the "somatic senses" produce other equally important symptom-factors in the changes of

motility; in melancholia with impaired inhibition there are both psychosensory and motor excitations and retardations,—in mania, with graver changes and losses of inhibition, motility is more disordered. The word "melancholia," by long usage and observation of the facts, really stands correctly in the recognition of its meaning all of its well-known symptom factors other than emotional depression; the word "mania" meaning madness, stands equally well for both its emotional variations and its motor excitement. In mania there is graver derangement of the "thinking process" and its "states" are at a lower level of reduction than melancholia. These references though meager serve to show that the terms melancholia and mania are well understood as including a great variety of states of varied combinations and proportions of their symptom factors; besides the many typical cases of each group there are found to be very many "mixed cases." There are many phases, and a two-phase conception to represent the original groups of "states" does not hold good; for example, taking out the emotional depression from one group and the motor excitation from the other, in order to designate the distinction of the phases and to characterize the compound "disease form," leads to the exclusion from it of the very essential psychomotor excitation often associated with the depression in the former group, and to overlooking the significance of the emotional changes in the latter. An adequate study of the "somatic group of senses," as suggested here should help to clarify the whole matter. Compound designations for the unified symptom groups yet suggested do not satisfy the requirements so well as their simple combination in "melancholia—mania." The psychoses cannot be limited to the insanities; we must speak of the "non-insane psychoses," and in psychology the word refers to normal function. It might be said that the first step in the classification of mental diseases discovers two great divisions: *functional insanity and deteriorating insanity.*

This discussion of the thesis that the problem of psychiatry is in the functional psychoses required first an examination of the terms and conditions of the problem. This necessitated an inquiry concerning certain principles and conclusions of the biological and medical sciences that have had a controlling influence in psychiatry. Morphological conceptions being dominant in medicine, it was found also that a number of terms and phrases are so commonly employed in medicine that their use has been compelled in psychiatry, although they embody conceptions and theories inconsistent with its dependence upon functional conceptions of mental pathology. The inquiry having led to the conclusion that the physiology of the life-process is the first recourse for psychiatry in the search for explaining principles, it becomes necessary to be emancipated from all preconceptions. The functional conceptions being framed, and applied consistently with the facts of physiology and psychology, lead to a recognition of the developmental and genetic

character of the functional modifications, and indicate their sources in physiological facts. A clearer idea is gained of the relation of conscious experiences to body states, and of the influence of the "somatic group of senses" in the relations of the conditions of the whole organism to the mental states. The dependence of all functional phenomena upon the processes of nutrition and metabolism for the maintenance of the nervous and mental mechanisms, points to the fundamental importance of pathological physiology and chemistry. Physiological and psychological experiment in the immediate clinical examination of functional modifications shown in symptoms helps to determine the physiological sources of the contributing disorders in the whole body as well as the central nervous system.

The psychiatrist inclined to inquiry finds, in the pursuance of his practical work, that as a physician he must treat the whole body, and that a functional conception of mental diseases leads to treatment. Psychiatry belongs to general medicine, and mental disease like bodily disease is not an entity nor an agency but the result of normal function acting under abnormal conditions; the problem requires the investigation of the developmental and genetic character of functional modifications.

Original Articles.

SERIOUS HEAD INJURIES AND THE INDICATIONS FOR OPERATIVE TREATMENT.*

BY B. SACHS, M.D., NEW YORK.

Alienist and Neurologist to Bellevue Hospital; Neurologist to the Mount Sinai Hospital, etc.

I AM deeply appreciative of the honor conferred upon me by the invitation to address the members of this Society. The task is one which I have not accepted lightly, and I fear I shall not be able to meet expectations. Your secretary, or some other person in power, has been kind enough to suggest the pace I was to adopt by sending me a list, not only of the remarkable publications of various members of your Society, but still worse, a list of the papers read before you by many distinguished colleagues from other cities whom you have honored similarly to myself. I cannot hope to vie with many of them in the display of learning, nor do I think it wise to deliver myself of what I might suppose to be a learned discourse.

It has occurred to me that it would be better to lay aside all claims to especial learning and to select for your consideration this evening a subject of general and practical interest, a subject which has forced itself upon me many a time during these past years and which led me to believe that it might not be amiss to discuss personal experiences and difficulties encountered in determining the propriety of surgical interference in serious head injuries.

So far as I can see, the question of operative treatment of skull injuries has been left largely to the decision of the surgeon. The points at issue have been discussed in surgical, and not in neurological textbooks; yet Bergmann concedes that the question, whether or not an operation is to be performed, is dependent, not upon the character of the injury to the skull, but altogether upon symptoms pointing to interference with brain function. I cannot indorse this extreme view. If the vault of the skull, more particularly in the parietal region, is severely injured, if there is evidence of continuous bleeding from the middle meningeal artery, the purely neurological considerations must yield to surgical doctrines. Under other conditions it is the neurologist, or at least the surgeon equipped with neurological skill, whose counsel should prevail.

Everyone of us, I am certain, feels, in view of the great advances in surgical technique, that any surgeon might do the usual laparotomy for appendicitis with promise of success; the chief difficulty is to decide, in a given case, whether or not the operation should be performed. Here, as elsewhere in medicine and surgery, diagnostic acumen seems to me to be of even greater value than ordinary surgical skill. This is just as true of operations upon the head. My own experience in collaboration with a number of the prominent surgeons of the day has taught me that the difficulty was not in doing an operation or in having it done, but to decide whether, in man, woman or child after an injury to the head, the patient would be better off if the skull were opened, and if the chances of life would be greater if we trusted to the surgeon's knife and not to the reparative powers of Nature herself. In view of the excellent paper which Dr. Walton published only a year ago (*Annals of Surgery*, November, 1904) on fracture of the base of the skull, I propose to exclude from special consideration the subject matter which has been so well covered in his paper.

I have been at some pains to discover the surgeon's point of view. He has paid great attention to the character of skull injuries, to the differentiation between the various kinds of fracture, to the attempt to differentiate between fractures and fissures. Fissures have been left largely to take care of themselves. This is no doubt due to the fact that they often cannot be recognized with sufficient accuracy, and if recognized, so long as there is no injury to the scalp and hence no danger of sepsis, surgical interference would be of questionable utility. Very properly surgeons are ready to trephine in every case of depressed fracture of the skull. There can be little doubt that in comminuted, depressed fracture the chances of life are greater if this comminuted fracture is treated in accordance with the most approved surgical principles. Such a purely surgical question it is well to leave entirely in the hands of the skilled and conscientious operator, but I ask what are the symptoms pointing to injury of the brain which are to argue in favor of immediate interference?

*Read before the Boston Society of Psychiatry and Neurology, Nov. 16, 1905.

The surgical writers on this point have had much to say on the distinction between concussion, contusion and compression of the brain. *Compression* from the surgeon's point of view is inferred from disturbances of circulation, while the diagnosis of *contusion* rests upon "microscopically noticeable destruction of brain tissue with extravasation of blood," and *concussion* is supposed to be due to two distinct disturbances; first, in cases recovering rapidly, "to a momentary anemia," and in protracted cases to "a combination of circulatory disturbance with disseminated microscopical contusions." This is the way in which one of the best surgical writers of the day attempts to illuminate the subject.¹

The question arises whether there is any other difference except that of degree between concussion and contusion. In the milder cases, which might be also called cases of simple shock, the disturbance is supposed to be due to momentary anemia; a very difficult proposition to prove or to disprove. But certain it is that while in some instances the symptoms of a sudden and marked anemia may be present, the diagnosis of shock is made innumerable times without the appearance of coma or convulsions, the only symptoms which are at all expressive of an anemia of the brain, if we may trust to the results of experiments on animals. In protracted cases of concussion, the combination of circulatory disturbance with minute evidences of contusion, simply proves that the difference between concussion and contusion is only one of degree and we cannot expect it to be otherwise if we bear in mind the experiments of Schmaus on the spinal cord of animals. The experiments of Koch and Filehne on the brain show that the nervous tissues as such are directly affected and injured as a result of the long-continued infliction of mild blows.

At first the centers appear to be stimulated and then exhausted. Horsley concluded long since that the symptoms which persisted after the effect of the primary shock had disappeared were due to minute hemorrhages. Kocher and others have maintained that the diagnosis of concussion is to be made if there is a sudden development of symptoms indicating a diffuse lesion of the brain with a rapid disappearance of the symptoms. Thus for instance, in a case in which there was complete loss of consciousness with rapid recovery we are to diagnose contusion; the diagnosis of concussion would rest upon symptoms pointing to a circumscribed lesion without loss of consciousness with symptoms pointing to subsequent inflammation in the area immediately surrounding the part injured. But why limit such a term to small areas when a very considerable portion of the brain may be exposed to the injury? I cannot see the logic of this distinction. The brain is supposed to be compressed if, with or without loss of consciousness, all the symptoms become more and more marked

thus indicating a spread of the trouble from the site of the original injury. Kocher insists that in the case of concussion there is naught to do except to prevent further mischief. In cases of contusion the only reason for interference is the desire to avoid permanent focal disturbance, such as paralysis, spasm, epilepsy. In the case of compression there is danger to life; and he adds that any one who does not wish to be guilty of neglect will resort to surgical procedures in every case in which he cannot absolutely exclude the possibility of compression.

The neurologist's point of view is not, and cannot be, the same; he will determine the advisability of operation in accordance with the evidence pointing to the site of the injury; he will also consider whether or not the affected area is within the reach of the surgeon's knife, and above all, will he consider how extensive the injury is; he will also bear in mind the possible reparative powers of the brain itself, knowing how much recovery is possible in hemorrhages into the brain and how much recovery takes place after various inflammatory processes. I do not wish to limit the surgeon's powers of exploiting the brain, or to clip his wings; I am anxious to establish a few principles by which his fortunate therapeutic powers can be directed into the proper channels. The cases which have afforded me the greatest difficulty have been those in which there has been no evident external injury but in which marked cerebral symptoms have developed after the injury. I need not insist on the frequency of injury to the inner table of the skull when the outer surface has remained apparently unimpaired.

The first case I wish to refer to is that of a young gentleman, thirty years of age, whom I had occasion to see in October, 1904, in association with Drs. Kimball and McCosh. He had been hurled from his automobile while participating in a race at eight o'clock in the morning. The chauffeur was killed outright. The patient was seen by a physician soon after the accident, who found him lying on the ground and resting on his elbows. He had been hurled a considerable distance, was stunned, but was able to answer some questions as to his name, residence, where he wished to be taken, etc. He was removed to a hospital a few miles distant, and when he arrived there the physician noticed a slight weakness of the right arm. On his way to the hospital he became more and more drowsy, the stupor increased and after an hour or more he was wholly unconscious and for the first twenty-four hours had to be catheterized. This condition remained practically the same until the next day when I had an opportunity of examining him. There were contusions over both eyes and on the right side of the head and there was a distinct hematoma over the occiput. He was somnolent but could be aroused at the time of my examination (about thirty hours after the accident) and could give his name and address correctly. He stated that his head hurt him, but would fall a sleep as soon

¹ Vid. Bergmann: *System of Practical Surgery*, Vol. I, p. 185, et seq.

as he was left to himself. His hearing was normal. The left pupil contracted more sluggishly to light, the right more promptly, the accommodation reflex could not be tested. All ocular movements appeared to be normal and the fundi were normal. The skull was not sensitive to percussion, but there was a distinct right facial paresis. The tongue appeared to protrude to the left. There was some weakness of the right upper and right lower extremities, the patient using the left leg and the left hand by preference. He was able to withdraw the right leg when tickled or pricked vigorously. So far as could be determined sensations were normal. The right knee jerk was subnormal and this was possibly due to peripheral contusion, for there were present a right ankle clonus and right Babinski reflex. On the left side the knee jerk was normal; but there were no clonus and no Babinski. At the time of my first examination he could be aroused sufficiently to void urine and did so without any difficulty.

From the nature of the accident, the slowly developing but prolonged unconsciousness, the difference in the character of the pupils, and the evident signs of external injury to the scalp, the wisdom of operative relief had to be considered. In view of the fact that the patient's unconsciousness had not deepened into coma, but had been less than it was a few hours after the accident; in view of the absence of fever and convulsive seizures and the improvement that had taken place in the voiding of urine and the improvement in the use of the limbs; in view of the fact that the patient had evidently struck his right side more violently than the left and yet the right extremities were paralyzed, the left uninjured, — considering all these points a favorable prognosis was given and it was decided that no surgical interference should take place unless the patient should become deeply somnolent and unless convulsions should occur and the paralysis become more marked; and more than this, surgical interference seemed altogether out of place; first because there was no sign of serious injury to the skull, and still more because everything pointed to a subcortical and possibly capsular hemorrhage by *contre coup* in the half of the brain opposite to the side to which the skull injuries had pointed.

In the consideration of this case, the question of concussion, of contusion or of compression did not enter.

The only inference of importance was that while the brain had evidently been somewhat injured, the injury was not of the most serious kind or else consciousness would not have shown some signs of returning and the power over the vesical reflex would not have been regained. Moreover, the symptoms pointed to the fact that the lesion was, first of all, a small one; and secondly, that it was situated in a region in which the surgeon could not have reached it even if he had the right to attempt to do so.

This patient made an excellent recovery. For a number of months after the accident he was

weaker in his right extremities than in the left, had some little dysarthria, and the right deep reflexes remained exaggerated. For a long time he was much annoyed by a peculiar form of amnesia, remembering everything up to the time of the accident, but he could not, weeks afterwards, recall his going to the race, taking part in it or being connected therewith. This same limited loss of memory I have noticed in other cases, and it would seem as though the associations had been so rudely disturbed that it required much time for them to be re-established. There is some doubt in my own mind as to whether this loss of memory is ever actually made good, for when the person learns to know later on of the accident and of the occurrences immediately preceding it, it is to be attributed to information subsequently and freely given him by relations and physicians. This loss of memory and of consciousness following upon even slight injuries to the head and brain raises the question as to what actually happened. The effect of the shock is evidently great and the delicate structures of the brain are no doubt thrown into confusion so that the functions of perception and association are instantly destroyed, or at least impaired.

That there are microscopic changes in cells and fibres and not merely circulatory disturbance one cannot doubt, but upon the nature of them it would be useless at this time to speculate.²

In a second somewhat similar case I had also decided that surgical noninterference was the best policy.

The case is that of a young woman who was brought into Bellevue Hospital early on the morning of Oct. 14 in a totally unconscious state. With some friends she had started out about midnight in an automobile to attend the races which were held early in the morning. The person in charge of the machine was evidently under the impression that he had an open street before him, was going at a high rate of speed, and ran the machine into an iron railing.

The car and its occupants were hurled into the opening of a tunnel some ten feet or more below. The patient landed on the opposite side of the tunnel opening at the base of a large stone building, at least one hundred feet from the point at which the car left the street. Strange to say, the other occupants of the car were uninjured, so far as I am informed. The young woman in question was at once brought to the hospital, and on examination by the resident physicians it was determined that she had a very severe contusion of the face and head, chiefly of the left side. The eyes were so much swollen that they could not be opened. There were some blood clots around the eyes and ears, but this was due to external injury and not to blood flowing from within. At the request of Dr. Stewart I was asked to see the patient that day. I found her deeply stuporous yet could be aroused by empha-

² Since writing the above my attention has been called to the excellent studies of W. B. Cannon ("Cerebral Pressure Following Trauma," *American Journal of Physiology*, Oct. 1, 1901) which I regret to have overlooked.

tie questioning. On account of the swelling of face and head it was impossible to determine whether or not there was fracture of the vault of the skull. The pupils were somewhat contracted but equal, reacting to light. There was slight left facial paresis and weakness of the left upper, and a lesser weakness of the left lower extremity. Speech, though somewhat indistinct, was not abolished. There was evidently no motor aphasia. The reflexes in the right upper extremity were slightly exaggerated and the right knee jerk could not be elicited, but there was some slight indication of an ankle clonus and a Babinski on the left side. Respiration and pulse were entirely regular and normal.

In view of the fact that there was no positive evidence of external injury to the skull nor of intracranial hemorrhage; in the absence of convulsive symptoms; and, furthermore, in view of the fact that twenty-four hours after the injury consciousness was not absolutely lost, I advised that operative interference be deferred, and that unless stupor were to increase and the paralysis to become more complete operative interference would not be necessary.

I saw the patient again on the succeeding days, and on the third day after the injury there was distinct improvement in the stupor, and although the patient was somnolent, she could be very easily aroused. The weakness of the extremities was less decided, the leg recovering so rapidly that there was some doubt as to whether it was much paralyzed. Sensation had never been disturbed and the patient soon regained control over the bladder. Speech was positively unaffected. Convalescence continued undisturbed, and ten days after admission the patient was, at her own request, discharged from the hospital and was practically certain to recover.

In view of the apparent severity of the initial injury, the enormous disfigurement of the face, there might have been reason to advise surgical interference, but in this case again the neurological evidence pointed to a tolerably small focal lesion. Nature is able to do more in the repair of such focal lesions, particularly if they are not near the cortical surface, than the surgeon can, and I am, therefore, firmly of the belief that in this case surgical nonintervention was the proper course to pursue. Had one been led by surgical appearances and by the mere probability of injury to the skull because of the character of the accident, a serious mistake might have been made and the patient's recovery would surely have been protracted if not considerably retarded.

Contrast with the preceding the case of a child of four years, who was brought into Mount Sinai Hospital on Sept. 29, 1905, ten minutes after the child had fallen out of a first-story window. The mother could not say which part of the body struck the ground first; she was certain, however, that the child was immediately unconscious and that there was bleeding from the left ear, mouth and nostrils. There were no twitches or vomiting. There was no involuntary micturition at this time and no deviation of the eyes. Exam-

nation by the house staff showed that the child was absolutely unconscious, groaning at times. There was a small punctured wound over the left parietal region. On account of the tremendous contusion of the scalp the physicians were not able to make out a depression over the parietal or any other region of the head. There was still some bleeding from the left ear, less from the nostrils, and a suspicion of fracture of the base. I was requested to see the child about seven hours after admission to the hospital and found that there was general edema of the left side of the face and head. The child was evidently able to move all its extremities though in a condition of deep stupor from which, however, it could be aroused. The pulse was slow, of poor quality and irregular in force and rhythm. The pupils were found to be small, regular, reacting sluggishly to light. Both eyes were turned inward; there was no subconjunctival hemorrhage. It was near midnight, the child was not wholly unconscious and the general condition was fair. I determined to await developments and saw the child again early the next morning. At this time I found it partly unconscious, responding intelligently to some requests. It moved freely in bed. There was a distinct left facial palsy. The palsy was peculiar in this one respect, that the lower branches failed to respond to the faradic current whereas the ocular branches did respond, from which I inferred (and the same inference I was able to make in another case of a similar character) that the facial palsy was not due, or at least not altogether due, to fracture of the base or to a central lesion, but was to be ascribed to the external contusion. At the margin of the edematous region of the scalp, a slight depression could be felt, and both the surgeon, Dr. Moschowitz, and myself at this time were quite certain that we could feel crepitation of the cranial bones in the left temporo-parietal region.

In this case, although the loss of consciousness was not complete and the general symptoms were not more marked than in some cases in which the diagnosis of simple concussion might have been made, I determined that the danger to the child would be far greater if the entire region were not explored surgically and lacerated brain tissue removed. The chief injury was evidently in the temporal region on the left side from which we could not have expected any paralytic symptoms, and in the stuporous condition of the child it was impossible to see whether or not there was speech disturbance. On the afternoon of the second day the operation was done, and from the surgeon's notes I quote that "a large horse-shoe shaped flap, about four inches in length, was outlined over the left side of the scalp corresponding in general to the squamous portion of the temporal bone. On incision of the skin and removal of the periosteum, a depression was seen with fractures running in various directions. Bone was removed over an area of 24 by 14 in. This exposed a large rent in the dura mater and showed the underlying brain tissue badly lacerated and mixed with blood. Portions of the brain coated out

between the ends of the fractured bone. The patient's condition grew alarming. The operation was hastily concluded by suturing the skin-flap and inserting an iodoform gauze packing after the hemorrhage had been carefully checked." In spite of our fears the child did well for some time after the operation. It became less somnolent, responded to questions by showing its tongue, etc.; there was no indication of any paralysis and there was no oozing of blood from the ear or nose. The child's hearing was not affected and it continued to do well until ten days after the operation when a sudden rise of temperature occurred to 104.2°; it became more somnolent, a fungus cerebri was developed, and some cerebrospinal fluid had continued to escape from the wound. The only inference was that infection had taken place, I believe almost unavoidably, during the various dressings, and on the thirteenth day after the initial symptom a second operation was undertaken for the purpose of bettering conditions if possible. The protruding mass was opened and disintegrated brain tissue was found which was pulsating slightly. There was no pus, but in the manipulation there was a sudden escape of considerable cerebrospinal fluid after which the mass collapsed and small tubes were inserted for drainage. Much to my surprise and that of the surgeons as well, the child continued to do fairly well until the twenty-first day when, against the advice of the physicians, the patient was removed to its home where it died a few days later, having lived twenty-six days after the initial injury. I may add that the culture of the fluid from the brain after the first operation revealed the presence of the staphylococcus albus.

The case was unusually instructive from several points of view. First of all, the retention of even partial consciousness in spite of the severity of the injury; the persistence of pupillary reaction; the entire absence of every form of paralysis; the tendency to convalescence for the first twelve days after the operation, and then the sudden exacerbation of all the symptoms, evidently due to secondary infection. Had it not been for the first operation, I fully believe that the child would not have survived as long as it did, for the brain tissue that was caught between the lacerated bones was bound to disintegrate and to become necrotic, and a general purulent meningo-encephalitis would have been the inevitable consequence within a few days.³ It is the difficulty of avoiding infection in these cases, or the difficulty of combating an infection which has taken place, that clips the surgeon's wings and baffles all our endeavors in cases such as these, and yet it is to be hoped that the day is not far off when infections within the cranial cavity will be treated with at least as much success as are at present those occurring within the abdomen.⁴

When drainage of the cranial cavity will be as well understood as is that of the pelvis and abdomen, and when surgeons will learn to handle the

brain as well as they have learned to handle the intestines, surgical statistics after brain injury will be far better than at present. Surgeons have not given as close study to the needs of the brain as they have to those of less dignified parts of the organism. In the mere matter of maintaining the natural heat of the brain, the surgeons are not nearly as careful as they are when they handle the gut. It would be well if they took Horsley's hint that during every operation on the brain, the natural heat of the brain must be maintained.

A question of distinct interest in connection with these injuries to the brain, is to determine the proper time for operation. If the skull has been most violently fractured, if there is a comminuted fracture of the skull accompanied by deep unconsciousness, by a slow and failing pulse and by irregular respiration, there seems to me to be every reason to advise surgical interference at as early a period as possible — within twenty-four or forty-eight hours. Valuable time should not be lost. But if the cerebral injury has not been so serious as to command immediate surgical intervention, I am of the opinion that if the symptoms point to a definite and, mind you, an accessible lesion in the brain the sooner the operation (if necessary, an exploratory one) is undertaken, the better. Moreover, I believe it is never too late to undertake such an operation providing the symptoms pointing to the existence of a definite focus are persistent and indubitable. The following is a case in point:

On May 24 of this year, I was asked to see Mr. A., a merchant forty-seven years of age. His family physician who had had him under observation for several months had correctly surmised that his symptoms were due to injuries which he had sustained. He was a man in good health, active in business and of bright intellect. His wife had never become pregnant, but his own personal history was absolutely negative. Luetic infection could positively be excluded. Three years ago while walking through a building that was in the process of erection, he struck his head against a beam. After this he had some headache, felt poorly, but paid no further attention to it, although the swelling of the scalp continued for several weeks. One and a half years ago he was waylaid at night on an Elevated railroad station and was struck with some heavy instrument on the head. He was stunned; was able, however, to get home and was not unconscious for an instant at any time thereafter. He suffered much from headaches, became somewhat disinclined to do work; the headaches became more intense at night than during the day, his sleep was disturbed, but for two months previous to my examination he had noticed hasty micturition and a tendency to somnolence during the day. There was an occasional aphonia, not an aphasia in any sense. He was able to read print and script. I was called to see the patient chiefly on account of the headaches and because he had noted considerable difficulty in writing. Good scholar as he was, he began to write imperfectly,

³ There was considerable injury to the scalp.

⁴ To avoid misunderstanding, I wish to express my admiration of the skill and devotion displayed by Dr. Moschowitz in the treatment of this little patient.

to spell badly, to omit words, and from Atlantic City he wrote a letter to his wife which might have been taken to be the letter of a man in the incipient stages of general paresis, — misspelling words, omitting others and exhibiting distinct tremulousness in the formation of his letters. At the examination, I noticed in addition to the facts already stated, that his speech was somewhat slow, reminding one a little of that of general paresis with the tendency to drowsiness and stupor, which was so great that while standing face to face and while he was being questioned, his eyes would close for an instant or two and then open, whereupon he would ask what the question was. The pupils were normal; the fundi appeared to be normal. There was a very slight right facial paresis, but there was no other form of paralytic disturbance. The wrist reflex was lively on both sides, and the deep reflexes of the lower extremities were increased. There was a distinct depression on the left side in the lower parietal region.

The partial agraphia, the slight disturbance of speech, the slight right facial paresis and the very insignificant depression on the left side of the head, all pointed to the existence of a small focal lesion, while the increasing tendency to somnolence, the hasty micturition and the intense headaches, indicated an increase of intracranial pressure, compression symptoms, if you will. Under these circumstances, although it was three years since the initial lesion, and although much doubt had been expressed as to the dependence of the symptoms upon the skull injury, I felt certain that there was either a small cyst or a localized cerebral pachymeningitis of traumatic origin. Five days later at my suggestion the patient was operated upon at Mount Sinai Hospital by Dr. Gerster. The scar was chosen as the site of the operation. There were marked adhesions of the dura to the skull; these were separated carefully; the exposed area was shown to be the leg center (by electrical stimulation); an aspirating needle was inserted to the depth of two inches which revealed the presence of an old hemorrhagic cyst which had been responsible for the symptoms; the dura was stitched and a celluloid plate introduced. The patient recovered well from the immediate effects of the operation.

After the operation there was absolute motor aphasia which I attributed altogether to the occurrence of post-operative hemorrhage. The patient recovered within the first three weeks, and then the recovery was uninterrupted and complete. I have seen the patient, a few weeks ago, five months after the operation; he is absolutely free from all headaches, the agraphia has disappeared and he is able to attend to his business as in former years.

In such cases as these, there would have been little use in discussing the question of concussion, confusion or compression. If there was anything of this sort in the beginning, there was a contusion of the skull with subsequent injury to the brain. This was followed in the course of time by a compression. How unimportant these

differentiations appear to be in view of the one and only significant fact that all the symptoms, slight as they were, pointed to a definite lesion. This lesion, moreover, was situated in an area in the brain that was accessible and was found to be within reach of the external injury. It was, therefore, incumbent upon us to advise operation in this case on purely neurological lines.

The result might have been a similar one in a medico-legal case in which I recently became interested. This patient was operated upon promptly and his more or less complete recovery was due, I believe, to the early intervention of the surgeon. This man was a builder, forty years of age, who had been passing out of an office building on Nov. 10, 1903, was struck on the left side of the skull by the head of a hammer which fell out of a ten-story window. He was stunned but did not lose consciousness at once. He asked for water, refusing whiskey which was offered him. He was taken in an ambulance to the House of Relief, where he was admitted and was subjected to surgical treatment. The patient could not recall reaching the hospital and does not remember anything from the time of the injury until the time he woke up from the operation. The hospital records state "compound depressed fracture of the skull with partial paralysis." The surgeons finding a depressed fracture and noting the paralysis, evidently resorted to trephining over the left parietal region in the vicinity of the leg center. He made a good recovery from his operation and was removed from the hospital thirteen days after the operation, at his own request, with the diagnosis "improved." Convalescence was undisturbed and the patient had been evidently improving ever since. At the present time he shows merely a slight weakness of the right upper and right lower extremity and increase of the reflexes in both the right arm and right leg. The man is unable, at the present time, to walk upon a high scaffolding and for that reason is suing for damages, and because he is incapacitated for work as a builder. With the medico-legal aspects of this case we, of course, have nothing to do. The fact cannot be gainsaid that if he had not been promptly trephined there might have been lasting paralysis of the arm and leg and possibly a chronic epilepsy. Whether trephining may be done to avoid epilepsy or whether it is entirely unnecessary to do it from this point of view, as Bergmann claims, is a question which we can hardly answer during this discussion, though I am willing to indicate that if a patient is brought in with a depressed fracture of the skull and his condition is otherwise such as to warrant operative interference the operation should be undertaken at once. The operation is practically a harmless one and it is far better to correct the depression than to run any chances in the matter of later epileptic disturbances.

From these personal experience, which I have selected somewhat at will from among a far larger number, I would lay stress upon the following points which I submit for discussion:

(1) If there is extensive injury to the skull, if par-

ticularly in the parieto-temporal region, whether it be fracture or fissure; if there is evidence of splintering of the inner table, or of the presence of a foreign body or of persisting intracranial hemorrhage, operative interference is warranted at the earliest possible moment. (X-ray examinations and lumbar puncture are valuable diagnostic aids.)

(2) In comminuted fracture of the skull the surgeon must decide whether or not the danger of infection is increased by surgical procedures. Surgical technique and surgical methods should be developed to such a degree that the brain and skull will be handled with as much skill as are the abdominal viscera.

(3) In all cases, but especially in those in which external injury cannot be taken to be the determining factor, the question of surgical interference must be decided on purely neurological lines.

(4) It is useless to continue the discussion of the differentiation between concussion, contusion and compression. It is much more important to decide whether the brain has or has not been tangibly injured; and if injured, whether the site of the injury is on or near the surface; in short, whether it is accessible or not. If inaccessible, simple trephining may be resorted to provided there are symptoms of increasing intracranial pressure which cannot be relieved by lumbar puncture or other simpler methods.

(5) Even if the injury is in an accessible region, it is best to adopt a conservative attitude and to determine whether we may trust to surgical skill rather than to the reparative powers of nature. Hemorrhages are often absorbed and many inflammatory processes recede more or less spontaneously.

(6) In determining the gravity of brain injury, disturbances of cardiac and respiratory action, of vesical and rectal control and the condition of consciousness are the most important symptoms. They are the manifestations of increasing intracranial pressure and of other serious injury. Recovery from coma, however slight, after twenty-four, forty-eight or seventy-two hours, is encouraging; deepening coma is of grave significance. The behavior of the pupillary reflexes is of no special value in deciding the question of operative interference.

(7) If the symptoms point to distinct focal lesion, although years may have elapsed since the initial injury, surgical measures must be adopted, providing only that the lesion be accessible.

(8) If the external injury points to one site and the symptoms to another, consider both; attack the site of external injury first but try to reach the other as well.

HEAD INJURIES.*

BY MORTON PRINCE, M.D., BOSTON.

I AM sorry that Dr. Sachs has eliminated from consideration fractures of the base. This distinction is entirely arbitrary, practically cannot

* Remarks in connection with a paper by Dr. Bernard Sachs, on "Serious Head Injuries." See p. 176.

be made, and, therefore, clinically is without value. Dr. Sachs seems to be unaware of the fact that, if we may draw conclusions from fatal cases, a localized fracture of the vault alone, at least in injuries sufficiently severe to implicate the brain, is rare.

I make this statement based on the study by Dr. Edwin W. Dwight of 146 autopsies, in which fractures of the skull were found. Dr. Dwight's paper, published in the Boston City Hospital Reports for 1894, is a very valuable one from a surgical point of view, and well worthy of study. It brings into relief many facts of importance. Out of 146 cases which came to autopsy, in only six cases was there a localized fissure of the vault alone. These, to be sure, were all fatal cases, and it is quite probable that in the non-fatal cases a localized fissure of the vault is more frequent, but, on the other hand, usually it is only through autopsies that we can determine the whole extent of the damage. The unreliability of the clinical signs is shown by the fact that in 31% of fractures of the middle fossa itself, no hemorrhage from the ear occurred.

The importance of this consideration is further brought out by the fact that in 29% of all cases, there was not only fracture of the vault extending into or through the middle fossa, but the fracture ruptured the branches of the meningeal artery, and death was believed to be due to cerebral compression.

We may say, therefore, that fractures of the vault, in the majority of cases, are fractures of the base, and we cannot, in the absence of the classical surgical signs, conclude that the fracture does not extend to the base, nor does it seem to me to be of any great consequence to make the distinction, inasmuch as it is the injury to the brain, and not to the skull, that does the harm.

Dr. Sachs has laid great emphasis upon the necessity of depending upon the neurological indications for determining the necessity of surgical interference. It seems to me that there is great danger here of creating and perpetuating a neurological tradition, just as there has been a surgical tradition as to the importance of separating fractures of the base from those of other parts of the skull.

We have been accustomed to hear, of late years, a good deal about the neurological indications in head injuries, the general implication, on the part of the neurologist, being that we can rely upon the neurological findings to determine both the character of the injury to the brain and its localization. These assumptions are usually meekly accepted by the surgeon as the dicta of a mysterious science. A good deal of this, I am afraid, has come to be little more than neurological cant. As a matter of fact, in a very large proportion of head injuries,—I mean injuries serious enough to implicate the brain,—technically speaking, there are no neurological signs of a special localizing character that give information regarding either the character or location of a lesion. I believe that anyone who has had the experience of a large general hospital, and thus has had an

opportunity to see a large number of cases, as many of us here have had, will find that this statement is borne out by his recorded experience. If he will look over the records of a large number of consecutive cases, he will find absence of localizing signs in the great majority.

I do not mean that there may not be general symptoms and other evidence that may enable us to form an opinion regarding the gravity and possible nature of the injury, but this evidence is not of that special neurological kind which may be technically called *neurological*. [Taking, for example, the cases I have seen within the space of a few weeks since Dr. Sachs' paper was read, nine in number, all carefully examined and noted, in only one were there so called neurological signs which indicated the seat or nature of the injury (whether hemorrhage, laceration, contusion, edema, etc.), and this one, a peculiar form of paraphasia with delirium, permitted only a doubtful localization. The neurological symptoms did not indicate the nature of the lesion. Seven of the cases were severe; six exhibited evidence of fracture of the base.]

In Dwight's collection "the question of paralysis was unfortunately raised in sixty cases" only. By this it appears to be meant that it was noted in only sixty whether or not paralysis was present. Of these, forty had none. (In seventeen, hemiplegia was found; in one, facial paralysis; in one, paresis of one arm, and in one, paralysis of the sphincters — a questionable diagnosis.) In other words, in two thirds of the fatal cases in which a record of the point was made there was no paralysis present. The proportion is probably higher than this, inasmuch as these statistics are based upon whether or not a symptom was recorded, and common experience shows that the absence of a symptom is much less likely to be recorded than its presence.

It must also be constantly kept in mind that even paralysis does not always indicate hemorrhage or laceration, but that it is sometimes due to edema, which may subside. I recall well, for instance, the case of a child which after a severe fall presented all the classical symptoms of meningeal hemorrhage. Operation was considered, but postponed, and, much to my surprise, in the course of twelve hours all the symptoms disappeared and a complete recovery was made. This could only be due to edema.

The greatest difficulty in determining the exact pathological lesion present and, therefore, the advisability of operation is met with in those cases that are unconscious from the beginning. When the accident does not result immediately in unconsciousness, or, if it does, when the unconsciousness is only temporary and then after a normal interval unconsciousness develops, the case is simple enough. Here the interval of normal consciousness is a plain indication, not only that the latest succeeding unconsciousness is due to a secondary hemorrhage, but that the brain tissue itself was not seriously bruised, lacerated or otherwise injured by the traumatism.

When, however, the injury is followed immediately by persistent unconsciousness, stupor or delirium, it is much more difficult, and often impossible to determine whether the coma and other cerebral symptoms are due to a hemorrhage or contusion or laceration or all three. To obtain data that will enable us to draw conclusions as to the exact anatomical conditions present in such cases, we are obliged to fall back upon the findings in autopsies. With this knowledge in hand, supplemented by the clinical findings and the nature of the accident, we may be able to form a fairly accurate idea of what has taken place within the skull.

The fallacy of drawing conclusions from autopsy findings, of course, is that they tell us only what has happened in fatal cases, which cannot be safely applied to the non-fatal cases. Still, as the difference must be only one of degree, the symptoms and the autopsy findings in fatal cases are instructive. Out of 138 fatal cases in Dwight's collection, in only 22 or 14% was there no laceration. Of course, in the other cases there was hemorrhage besides. This frequency of laceration explains the fact that in so many cases in which trephining is performed and a hemorrhage found and removed, a fatal result is not averted. There is so much laceration of the brain itself that the mere removal of a hemorrhage accomplishes little.

Plainly, the advisability of operation must depend upon the nature of the lesion within the skull. In deciding whether we have to deal with a hemorrhage or laceration or contusion of the brain or a combination of the three, and the extensiveness of the lesion (putting aside the classical and simple cases of meningeal hemorrhage) we must take into consideration four kinds of evidence:

First. The nature of the blow. Was the blow (meaning not to the person but to the skull) of a character which would be likely to shake and lacerate the brain, as well as rupture a vessel? A person may have a severe fall, and yet the head may not be struck severely, while the reverse may be the case. If a person should fall from a height and strike his head with violence, it would be almost a certainty that the brain would be lacerated; whereas, a blow from the fist or a slight fall from the street might only rupture an artery, without greatly bruising the brain.

Second. The general symptoms, such as coma, temperature, pulse, stertor, etc.

Third. The neurological indications.

Fourth. Surgical evidence of injury to the skull.

In many cases, the first class of evidence — the character of the blow to the head — will furnish most important evidence. All the evidence must be weighed and considered as a whole.

The larger one's experience, the more conservative, I think, one tends to become in advising operation. This is explained by the great frequency of laceration which under any good that might come from the removal of a hemorrhagic clot, as well as the difficulty in finding it.

In many cases it is impossible to decide whether we are dealing with pure hemorrhage or not; but, as with appendicitis, we shall often have to operate unnecessarily in many cases, that is, in cases which would have recovered without operation, or without doing good, in order to make certain of not letting a patient die for lack of operation. The fact I have already mentioned, that in 29% of Dwight's fatal cases, the fracture of the vault in extending to the base had ruptured the meningeal artery, and that death was believed to be due to compression from clot, must make us dread lest we should lose a life by neglecting to operate. And yet the conclusion that death might have been averted by removal of the clot, if it had been possible, in the 29%, is hardly tenable, considering the presence of laceration in 140 out of 146 cases.

INDICATIONS FOR OPERATION IN HEAD INJURIES.*

BY WILLIAM N. BULLARD, M.D., BOSTON.

In speaking of the indications for operation in head injuries only certain general lines of treatment can be laid down. There must be exceptions to the general rules in certain cases, to some of the rules in many cases. Each doubtful case must be considered by itself and acted upon as seems wisest when all the special circumstances have been duly weighed.

The following are the rules which I have found useful from my practice and experience in cases of fracture or suspected fracture of the skull.

Wherever we have absolute evidence of fracture by sight or touch our course is comparatively plain. It is in those cases in which we cannot be certain as to the existence of fracture, although the injury or condition is a serious one, that the greatest difficulty arises in determining our course.

We will first consider the cases in which we have absolute evidence of fracture by sight or touch.

Compound fracture of the outer surface of the cranium. I believe that operation in these cases in adults is always advisable, assuming that there are no serious contra-indications from the general condition of the patient, the condition of the heart or kidneys or injury or disease in other portions of the body. Hereafter, throughout this paper, I shall assume that such contra-indications are understood not to exist.

In compound fracture of the external surface of the cranium in adults, *operate*. Probably even in long linear fractures where there is no displacement or depression of bones, it is wiser to operate. The operation under proper conditions should not be serious and the risks which are run in the non-operated cases cannot at the present time be estimated. While probably most of such cases show no serious sequence, we never can be certain that epilepsy or some other serious consequence may not follow such an injury.

SIMPLE FRACTURE OF THE EXTERNAL SURFACE OF THE SKULL.

In adults it is safer to operate in all cases where there is clear external evidence of fracture. In children it is sometimes permissible not to operate in cases of fracture of this kind where no symptoms exist.

Depressed fractures. In adults depressions rarely or never occur without fractures. All depressed fractures should be operated upon.

CASES OF HEAD INJURY WHERE FRACTURE IS SUSPECTED OR MAY EXIST.

Cases in which the question of operation is determined by the existence of symptoms other than the existence of the fracture itself.

There are certain symptoms or groups of symptoms which when they accompany or follow serious head injury have great weight in determining the question of operation.

Operate (a) in all cases where symptoms of middle meningeal hemorrhage exist. We should as a rule operate in any case where unconsciousness comes on after an interval of consciousness following injury to the head.

Operate (b) in adults whenever the unconsciousness after a severe head injury lasts more than twelve hours and where it seems clear that the unconsciousness is due to the injury and not to alcohol or other causes or complications. This rule is not universal. It is true that a certain number of these cases recover without operation and even may have no further symptoms, but operation is usually the safest plan.

(c) As a rule it is wise to operate where persistent unilateral convulsions follow injury to the head in an adult, provided that such convulsions have never occurred previous to the injury and that no other cause for them, such as uremia, exists.

(d) When cerebral or meningeal paralysis occurs immediately following a severe injury to the head, the question of operation often arises. Hemiplegia or monoplegia under such circumstances do not absolutely indicate operation. They may be due to hemorrhage or other injuries in parts of the brain which are out of reach. This condition may have been the cause of the fall or injury and not the result.

(e) Inequality of the pupils occurring immediately or shortly after injury is indication in favor of operation.

(f) Temperature: Immediate and persistent rise of temperature (not otherwise accounted for) occurring after severe head injury suggests contusion or laceration of the brain. Rise of temperature within twenty-four to seventy-two hours after injury, especially if the patient is unconscious, suggests secondary encephalitis or inflammation of the brain.

(g) Pulse: Slow pulse suggests compression, hence, with other symptoms, is an indication for operation. Rapidity of the pulse in itself does not contra-indicate operation. Weakness of the pulse may be a contra-indication.

The third class of cases to be considered is that

* Read in connection with a paper by Dr. Bernard Sachs, in "Serious Head Injuries," p. 176.

in which the patient is found unconscious or for any other reason unable to give an account of himself, and trauma must be considered, although the evidence from history or signs is not definite. In these cases operation is only justifiable or advisable when all other ordinary causes for the condition are excluded.

We must carefully exclude alcoholic edema, uremia, diabetic coma. Non-traumatic apoplexy is a common cause of such conditions and they may be produced in tumor of the brain or in various forms of meningitis. Hemiplegia or monoplegia in these cases is not in itself an indication for operation.

Clinical Department.

BRAIN INJURIES.

1. GUNSHOT WOUND INVOLVING BOTH OCCIPITAL LOBES: STUDY OF VISUAL FIELDS.

2. FRACTURE OF SKULL: INJURY TO FRONTAL LOBE.*

BY HENRY C. BALDWIN, M.D., BOSTON.

W. C. S. Thirty-four years. Service of Dr. James G. Mumford, Massachusetts General Hospital.

July 24, 1905, the patient was brought to the hospital with a history of having been shot five hours previous by the accidental discharge of a 32 caliber rifle. The bullet entered at the lower part of the right occipital region, and the direction of the bullet was diagonally upward.

I was asked to see the patient in consultation by Dr. Mumford. The patient was conscious, and had been ever since the accident. There were no paralyses of the face, arms and legs. The reflexes were all normal. The pulse was not slow. The only symptom that the patient had was total blindness. The pupils were widely dilated, and did not react at all. The diagnosis was made of injury to the visual centers in both occipital lobes. An X-ray showed that part of the bullet was lodged near the entrance of the wound on the right side, and that part of the bullet was in the occipital lobe on the left side. The point of entrance

was very small, and it was recommended that large openings should be made over both occipital lobes to give good drainage.

Free openings were made by Dr. Mumford on both sides. On opening the skull on the right side, disorganized brain substance and considerable blood oozed out, and the finger of the operator went into a cavity. There was a hole through the falx cerebri, and a piece of bone was extracted from the left occipital lobe, which had been carried through the falx from the point of entrance. The piece of bullet located in the left occipital lobe was not found, and it was not deemed wise to risk doing any damage by searching for it. A recent X-ray shows a piece of bullet still remaining in the left occipital lobe.

The patient was totally blind the next day, but there were no other symptoms. Three days later the patient began to see a little, and his pupils became smaller and responded to light. There was no rise of temperature, and the patient had no symptom whatever except his impaired vision. Before he left the hospital, an examination by Dr. Tracy Eastman was made of his field of vision and of the condition of his fundi. The field of vision was absent on the left side; there was about a quarter field of vision on the right side, the right eye having a larger field than the left, as shown by the diagram. The vision was 20-20 in the quadrant of each eye, and the fundi were normal. In this case the total blindness at first was due to destruction of the visual center in the right occipital lobe, and to injury to and hemorrhage into the visual center of the left occipital lobe. Undoubtedly, the free openings that were made over both occipital lobes were largely instrumental in preventing sepsis, and the free drainage afforded aided the recovery of the injured center on the left side.

The patient reported to me Nov. 16, 1905. His field of vision had increased a little, as shown by the diagram. Dr. Alex. Quackenbos stated that the vision and fundus were normal. The patient told me that he had been out shooting and had been able to bring back partridges and squirrels.

The field of vision was taken by Dr. Robert C. Loring on Dec. 16, 1905, and the diagram shows an increase in the field of vision. The vision and fundi are normal.

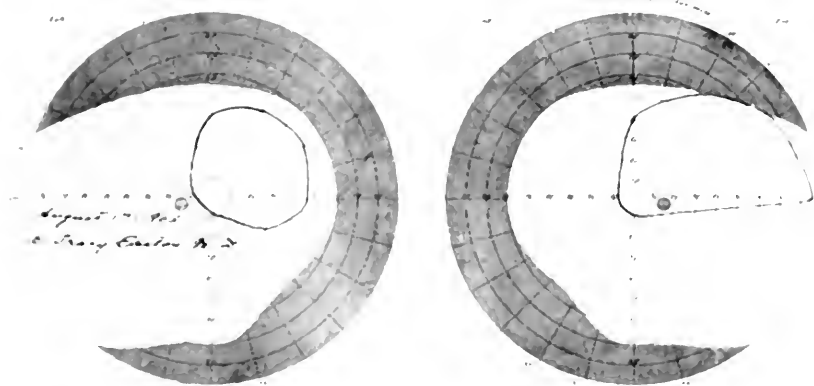


FIG. 1. Visual field, Aug. 17, 1905.

* Read at a meeting of the Society of Neurology and Psychiatry, Nov. 10, 1905.

Cases of gunshot wounds causing injury to both occipital lobes are rare. In the medical and surgical history of the Civil War, exclusive of cases that were fatal on the field, there were reported 4,350 cases of gunshot injuries of the cranium. Of these cases 2,514 died. There were 559 cases of penetrating and perforating wounds of the skull, 458 of which died. In looking over 119 cases that were given in detail I can

South Africa," Makins reports three cases of injury to the left occipital lobe and two cases of injury to both occipital lobes due to gunshot wounds. In one case of injury to the left occipital lobe, no mention is made of the field of vision, but in the other two cases there was hemianopsia. In the two cases reported of injury to both occipital lobes, the fields of vision were affected in both eyes.

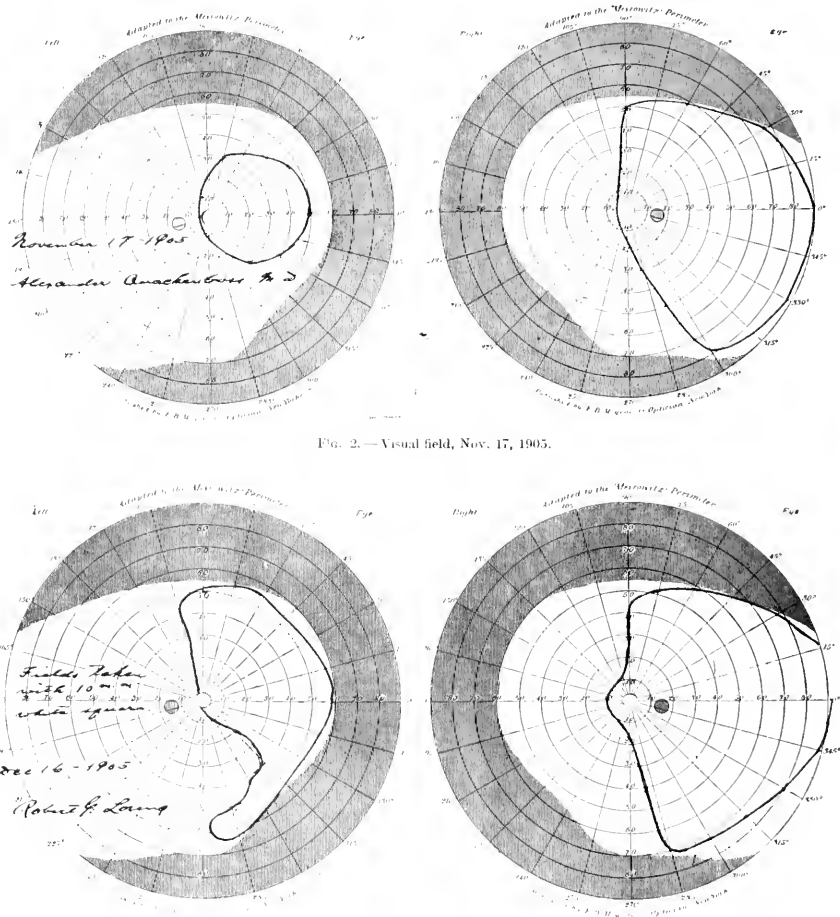


FIG. 2.—Visual field, Nov. 17, 1905.

FIG. 3.—Visual field, Dec. 16, 1905.

find no case of injury to the occipital lobes reported. It is interesting to note that there are but 1,190 gunshot wounds to the eye reported, and that only 63 of these cases lost the sight of both eyes.

In his book entitled "Surgical Experiences in

MASSACHUSETTS GENERAL HOSPITAL.—SERVICE OF
DR. W. M. CONANT.

C. E. II. Fifty-five. Man was struck and knocked down by an electric car, June 16, 1905. When brought to hospital was noisy, restless and apparently drunk. There was no disturbance of pupils or reflexes. There

was fracture of the left clavicle; no fracture of the skull made out. There was no bleeding from ears, mouth or nose.

The patient had nothing remarkable in the way of symptoms.

July 1, I was asked to see him in consultation with Dr. Conant, as a matter of routine and to express an opinion as to the advisability of his leaving the hospital. He had a normal temperature, his reflexes were all normal, and there was nothing remarkable about the pupils. The patient answered questions readily and correctly. There was an area of discoloration over the forehead running down into the right eye, which gave evidence of the patient's having received a very severe blow. The mental condition, though not confused, was dull, and the man seemed apathetic and slow in comprehending and answering. The diagnosis was "the results of concussion and alcoholism," and further observation was advised.

The patient became duller five days later, and died a week later after having run a septic temperature for a few days.

Before the autopsy I stated to the House Officer that they would find a fracture running through the frontal bone; that one of the anterior lobes of the brain would be found disorganized, and that the patient died from sepsis through the infection of this disorganized lobe, the entrance of the infection being through the nose. The picture shows the condition found.

These cases where the anterior lobe is seriously injured by direct violence have not been very common in my experience. Both patients had no symptoms that were localizing or that indicated mental disturbance. Their dullness and slowness of mentality were all the symptoms that indicated any brain trouble. In both instances it has seemed to me that, if the condition had been recognized, or rather suspected, operative treatment might have been effectual. Where such a condition was suspected, or where in a head case with a history of direct violence to the front of the head the patient began to run a temperature, it seems to me that it would be justifiable to make an exploratory incision to ascertain if there were a fracture of the skull. If such a fracture were found, an opening into the skull to afford free drainage would seem to give the patient a chance. Such an incision could be made in the hair line, the flap being turned down to give a view of the forehead. An opening through the skull on the side to avoid the frontal sinus would give good drainage to the anterior lobe.

A CASE OF ADIPOSIS DOLOROSA.

BY E. W. TAYLOR, M.D., AND R. L. LEE, M.D.
From the Neurological Service, Long Island Hospital, Boston.

THE rapidly increasing reports of cases of *adiposis dolorosa* have not shaken Dercum's original claim, that the condition merits the distinction of being regarded as a distinct disease, separable from simple adiposity on the one hand and myxedema on the other. The affection commonly known abroad, as well as in the United States, as Dercum's disease has taken a perfectly definite place among the easily recognizable disturbances of nutrition, in spite of the fact that the final etiology remains obscure, and a specific form of treatment has not yet been found. The following case is reported as a somewhat typical instance of painful obesity, following general alcoholic poisoning.

Margaret A., aged thirty-nine, born in England, married, occupation, housework; entered the Long Island Hospital Jan. 11, 1902.

Father is living in England; mother died at forty-seven of phthisis; of two brothers and seven sisters, five died in infancy, cause not known; two sisters and one brother living and well. Most of mother's family died of phthisis. None of the family ever had a disease similar to the disease of patient.

She had measles and pertussis when a child. Other wise healthy. Menstruated at fourteen; menstruation has never been troublesome. Married at seventeen, and has had five children, three of whom are dead, one died of convulsions, one of brain trouble, and one of unknown cause. She has had two miscarriages, which occurred between the births of living children. Pharyngitis seventeen years ago. She says she began to have rheumatism seven to nine years ago, when it came after exposure to wet and cold, and was accompanied with swelling of feet, pain, tenderness and numbness. These symptoms were confined to the feet and legs and lasted for from ten to twelve weeks, during which time she could walk only with the aid of



FIG. 4.—Showing injury with softening to frontal and temporal lobes.

This is the second case that I have seen of this kind. The first case was a man who was riding on a bicycle and ran into an electric car. He was not unconscious, and presented no symptoms for over two weeks, when he ran a temperature and died of sepsis. The right anterior lobe was even more disorganized than was the case in this instance.

crutches. She had several attacks after this which usually came in the winter and after exposure.
 * Habits: About twelve years ago patient began to take whiskey to excess. Since this time up to entrance she was intoxicated for four weeks at a time and then again went a year without drinking. For five months before entrance she was intoxicated much of the time. She denies venereal disease.

Eight weeks before entrance upon awakening in the morning patient could not get out of bed owing to pain in the legs when weight was put upon them. When in bed she was free from pain. She complained of weakness in her knees which in a few days was present in her hands associated with pain and soreness. At this time she would drop anything placed in her hands. The pain was severe and described as shooting down the arms to the fingers and similarly down the backs of the legs to the toes. For a month previous to entrance she vomited two or three times every day, generally after ingestion of food.

Physical examination at time of entrance showed nothing abnormal except general tenderness over the entire body but especially over the nerve trunks; pain on motion and marked ataxia of arms and legs. Knee jerks and plantar reflexes were absent; no clonus. Temperature was elevated. Urine negative. Examination of blood showed hemoglobin 70 per cent; reds, 5,800,000; whites, 18,200. Her mental state attracted no special attention.

After entrance the condition of the patient showed no improvement until the latter part of February, when the paralysis and anesthesia in the hands were less marked and she complained less of pain.

On March 23, 1902, although the patient had apparently been familiar with her surroundings, as she expressed it, she "came to herself." She remembered nothing of her stay in the hospital to this date and did not remember having seen the visiting physician before. From this time to the last of April she steadily improved although she still complained of pain and swelling of the legs; she was, however, able to sit up in a chair. Her legs continued to swell and during the fall of 1902 it was noticed that she was gradually increasing in size over the entire body which seemed to be more marked when she was up, no doubt due to natural physical causes.

A physical examination Nov. 20, 1902, showed that the patient was unable to stand; that the knee jerks were still absent and that there was an increase in general size, but particularly of the lower extremities. The legs were larger every way than formerly; just above the knees there were large tabs of tissue. The arms had also increased in size and on the upper arms behind were large, flabby, lipomatous masses. The breasts and abdomen were not at that time increased in size. Measurements:

| | |
|--------------------------------------|------------|
| Left thigh (5 inches above patella), | 23 inches. |
| Right thigh, " " " " | 22½ " |
| Right calf, | 17½ " |
| Left calf, | 17 " |
| Left ankle, | 11½ " |
| Right ankle, | 12 " |
| Left upper arm (greatest circum.), | 17 " |
| Right upper arm, " " | 16¾ " |
| Left forearm (3 in. below elbow) | 11 " |
| Right forearm, " " " " | 11½ " |

Her urine varied in amount from day to day (980 to 3,150 cc.). She had during the fall several gastric upsets and severe attacks of headache; also pain in arms, fingers and legs.

Measurements taken Jan. 8, 1903:

| | |
|--------------|-------------|
| Right thigh, | 23½ inches. |
| Left thigh, | 24½ " |

| | |
|-------------|-------------|
| Right calf, | 18½ inches. |
| Left calf, | 18½ " |
| Right arm, | 11½ " |
| Left arm, | 11½ " |

Physical examination at this time showed movements of legs fairly free except as restricted by pain. Deep pressure, irrespective of the nerve trunks, was painful. Tactile sensation was normal over legs. Plantar reflexes absent.



Showing fatty pads on arms and back, and fatty nodules, especially marked on the thigh.

During the spring of 1903 she had paroxysmal attacks of pain occurring every two or three weeks and lasting for a few days, located chiefly in the legs.

Measurements taken July, 1903, showed:

| | |
|----------------------|------------|
| Right leg (at knee), | 22 inches. |
| Left leg, | 21 " |
| Right calf, | 19½ " |
| Left calf, | 18½ " |

On July 31, 1903, a thrombus of a superficial vein of the arm was diagnosed. During the summer the patient gained considerably in weight; the pain seemed to be increasing and continued sporadically throughout the whole of the fall and winter.

During the spring of 1904 the patient continued to gain in weight; the pain became less severe and came at less frequent intervals. Since Feb. 20, 1904, she has been able to walk at times with comparatively little discomfort.

Sept. 1, 1904. She now complains of pain which is of the "pins and needles" variety and which occurs in hands, arms, feet and legs. The pain is paroxysmal, on some days the patient being entirely free from it and on others requiring the use of morphia. The pain in the hands is accompanied by a fine tremor of the hands and fingers. Menstruation apparently has no

relation to the pains. Headache is a very troublesome symptom; this is much better after the menstrual period which occurs regularly every four weeks. Patient says she never feels warm enough to sweat and her skin is always dry. Hematemesis or hemoptysis have never been present, but she says that scarcely a day passes without a slight epistaxis. She has not suffered from bronchitis or dyspnea. She had an eruption on the body several years ago, "similar to measles." (The records of the hospital give no account of this.)

About the latter part of August, 1904, a red, swollen, painful area about the size of a half dollar appeared on the anterior aspect of the left lower leg just above the ankle. No fluctuation was ever obtained and the redness and swelling subsided in about a week under treatment with flaxseed poultices. A similar area appeared soon after on the outer aspect of the other ankle and later one appeared on the abdomen. Both subsided in a few days. She has never had any abnormal sensations of heat or cold.

During the first part of the time the patient was in the hospital a weight chart was not kept but she says that the first time she was able to be weighed, which was in the spring of 1902, she weighed 148 pounds. She now weighs, Aug. 30, 1904, 260 pounds. There has been a progressive gain in weight during the past year. Treatment has consisted of alternate treatment with potassium iodide and thyroid extract, as much as 5 gr. t. i. d., being given of the latter for a considerable period of time but apparently without effect.

Nov. 14, 1904. Since August there appeared a red, swollen area in the left axilla similar to areas previously described and which passed away in a similar manner. Patient now makes no complaints except of pain in and on pressure over areas of fat, and of dizziness. Her appetite is fair. She has no trouble with her sight, hearing, taste, smell or speech. Her sensibility to touch is normal. There is no pain on pressure over any definite nerves. Her grip is strong and equal on both sides. Pulse is rapid (130), of fair volume and tension. Her heart area cannot be satisfactorily marked out on account of her obesity; the heart sounds are faint but no murmurs are heard. There is no edema. Her general color is good; the face is generally flushed about the cheeks. Knee jerks are slight but equal on both sides. Her hair is plentiful and moist. She is in good general spirits much of the time and gets about the ward with the aid of a chair which she pushes in front of her. She now weighs 273 pounds. Measurements taken at this time are as follows:

| | |
|--------------------------------------|----------------|
| Left thigh (5 inches above patella), | 27 1/2 inches. |
| Right thigh, | 26 1/2 " |
| Right calf ("greatest circum."), | 20 " |
| Left calf, | 20 " |
| Left ankle, | 11 1/2 " |
| Right ankle, | 11 1/2 " |
| Left upper arm (greatest circum.), | 20 " |
| Right upper arm, " | 21 " |
| Left forearm (3 inches below elbow), | 13 " |
| Right forearm " | 13 " |

The fat bears no relation to muscles but in addition to its general distribution it exists in large flabby masses which hang from under her arms and from the scapula, thighs and calves. The abdominal fat hangs in a heavy, apron-like fold on the thighs and the breasts are large and pendulous. The fat of the lower legs hangs in a roll over the ankles, is extremely tender to the touch, firm, and has a lobulated contour feeling in many places similar to a varicocele but considerably harder.

Nov. 26, 1904. There is no indication left of the former neuritis; nerve trunks are not painful; there is

no atrophy of the small, hand muscles in which Faradic reaction is easily obtainable; the skin is normal in appearance. To-day the fat of the arms, irrespective of nerve trunks, is exceedingly painful whereas other portions of the body are not. According to the patient's statement the painful areas vary from time to time for no apparent reason. Sensibility and motility, except as interfered with mechanically by the fat, remain normal.

The year which has elapsed since the last notes were made has seen no definite change in the physical condition of the patient. She is enormously fat as already described and pain is frequently easily excited by pressure over the fatty masses. On the whole she has improved somewhat physically and gets about with greater ease than formerly although naturally still with great difficulty. Her mental condition is of much interest. There is no sign whatever of dementia, but the variety of her moods may certainly be regarded as pathological. At times she is effusive in her appreciation of what has been done for her and at others she becomes morose and disagreeable in manner with an ability to find fault, which is wholly unnatural and for which there is absolutely no cause. In her doleful moods she is unable to account for her moroseness and altered feelings. She admits that she has received nothing but kindness at the hands of her attendants and regrets her ill temper which she says she is totally unable to either explain or control. Her general manner on these not infrequent occasions is that of a sulky and fault-finding child. There is no evidence to show that this change of temperament was habitual with her before her illness.

The points of special interest in this case are, the onset directly following and apparently in association with an alcoholic neuritis; the diffuse distribution and characteristic pain of the fatty deposits, and the mental symptoms which immediately preceded the development of the fat and have persisted in different form since.

There can be no doubt that when the patient entered the hospital in 1902, she was suffering from alcoholic excess, which manifested itself as a generalized neuritis, and which so far affected her mental state that up to a certain date she remembered nothing of previous events. There was at no time a definite delirium, and the failure of memory afterwards noted was not conspicuous during the earlier period of her illness. She was at this time a woman of ordinary size. As the neuritis improved, a gradually increasing weight made itself manifest, as indicated in the foregoing history, characterized by diffuse deposits of fat, painful on pressure and manipulation. The character of these fatty masses corresponds closely to Dereum's description, — lobulation, "worm-like" feel, with extreme sensitiveness at times. It is, however, worthy of special remark that the sensitiveness of the fatty deposits varies markedly from day to day and week to week, and is not to be explained by the assumption of a persistence of the neuritic process, for which she first sought relief. There is now no evidence that special nerve trunks are involved, and the pain appears wholly limited to the fat. Discrete fatty tumors are nowhere in evidence, nor is an ordinary adiposity to be considered in view of the accompanying symptom of pain. The mental condi-

tion of the patient has been described. In view of other reported cases, its association with the general process may be assumed as probable. It is, in any event, certainly abnormal, and is not unlike the condition of a patient described by Vitaut.¹

Since Dercum's first description of the disease in 1888, and later under the name of "adiposis dolorosa," in 1892, much attention has been paid to the subject, and the list of references no longer permits us to regard the affection as among the rarities. Several facts are noticeable in this connection, that Dercum has been given full credit by foreign and American writers alike for his pioneer work, that extremely little has been added to his first descriptions which, although now nearly fifteen years old, may still be read as a wholly adequate description of the affection; and finally that the attempt to deprive the symptom-complex of its claim to independence has signally failed.

Vitaut² has discussed in comprehensive form the existing opinion regarding the affection up to the time his paper was written. The four cardinal symptoms, of lipomatous tumors, pain, asthenia and psychic disturbances, are recognized. Accessory symptoms are motor disorders, sensory and special sense disturbances, and particularly disorders of the sympathetic system. He distinguishes these types of the affection, as nodular, diffusely localized, segmental and diffusely generalized. The etiological factors are considered to be neurotic heredity, alcoholism and traumatism. Anatomically these stages may be recognized in the development of the lipomatous tumors, edema and embryonic mucoid tissue, tissue, in process of organization and fat, and, finally, fat and sclerosis. The mechanism of the production of the tumors is regarded as certainly through the nervous system, and the cause which puts this mechanism into play is very probably an intoxication of thyroid origin, as indicated by clinical analogy, lesions of the thyroid found at autopsy, and the results of treatment.

With these general conclusions there will, no doubt, be considerable divergence of opinion. The possibility of distinguishing three types is questionable, although on purely clinical grounds such an attempt may be useful. It also helps very little, to place hereditary predisposition and trauma in the category of etiological factors, and alcohol, although probably operative in our case and in several others reported, must certainly be given a place of merely relative importance. Furthermore, to say that the mechanism of the production of the tumors is surely nervous, does not help toward the elucidation of the real question at issue. That the thyroid gland has a share in the process seems highly probable, but far from proved. The treatment by thyroid preparations has been occasionally beneficial, but by no means universally so. In our case its effect was altogether doubtful. In general, the enthusiasm expressed by Vitaut for the thy-

roid treatment will hardly be received with unqualified assent.

An admirable review of the whole subject has recently been made by Weiss,³ who expresses himself conservatively regarding the relation of the thyroid gland to the disease and to its treatment. He regards the treatment as uncertain, and the probability merely established that the thyroid gland has a share in the production of the affection.

The disease still awaits a satisfactory explanation, and no doubt its actual etiology will remain obscure, until we have progressed much further in our understanding of the body metabolism.

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² Loc. cit.

Reports of Societies.

THE BOSTON SOCIETY OF PSYCHIATRY AND NEUROLOGY

HELD ITS REGULAR MEETING, NOV. 16, 1905, WITH THE PRESIDENT, DR. MORTON PRINCE, IN THE CHAIR. W. E. PAUL, M.D., SECRETARY.

DR. BALDWIN reported two cases of skull injury.¹

A CASE OF CONTINUOUS AMNESIA.

DR. MORTON PRINCE showed a case of continuous amnesia, resembling, in certain respects, Korsakoff's psychosis. The loss of memory had followed an illness, characterized by delirium and paraplegia, which had occurred about one year previously, but the exact nature of this illness could not be determined from the history. It was possibly a multiple neuritis, although the sphincters were involved. After coming out of the delirium, there was *retrograde* amnesia for a period of a whole year preceding the attack. During this time he had been editor of a newspaper, but the patient remembered absolutely nothing of what he had done during that year, although he had been married at some time during this period. Since the paralytic attack, he had been affected with *continuous* amnesia; that is to say, the patient forgets everything as fast as he experiences it. For instance, in a minute or two after entering a room, he forgets how he got there, and similarly, after being examined, forgets everything that has been done to him. He loses his memory for persons, places, etc., in the same way, yet his reasoning powers are acute. There is no loss of logical capacity, nor, as far as one can tell, of memory of the events of his life preceding and up to the beginning of the retrograde amnesia when he entered upon his editorial duties. The events of this part of his life he recites apparently with normal ease, as he also can repeat passages from books which he learned at a date preceding the amnesic period. [The patient here recited a passage from "Paradise Lost."]

The case differs from Korsakoff's psychosis in that no falsification of memory can be detected. The association of continuous amnesia with retention of a normal logical power of reasoning and clearness of thought, without delusions, falsification of memory, or apparently impaired reasoning power is a striking feature of the case.

A complete account of the case is reserved for publication.

DR. SACHS, of New York, read a paper on

SERIOUS SKULL INJURIES AND THE INDICATIONS FOR OPERATIVE TREATMENT.²

DISCUSSION.

DR. J. C. WARREN. It is encouraging to the surgeon to see a specialist of Dr. Sachs' standing interested himself in this subject as it seems to display a more hopeful prognosis for traumatic brain lesions. When cerebral surgery was first expected under hopes were raised and a period of reaction has followed. Now that renewed attention is being given to the subject we may hope that a more accurate pathology may be worked out and more definite rules established for the surgeon's guidance.

A satisfactory diagnosis can be made in these cases by the painstaking and precise work which only a specialist can give the task, the surgeon's role being, in certainly a large number of cases, simply that of the artisan ordered to do a prescribed piece of work.

In view of the dreadful possibility of epilepsy we are justified in persisting in the attempt to find out a way of operative relief if such be possible. In even the worst cases surgical help is sometimes of benefit. What the brain can stand in the way of injury was shown in the famous crowbar case. Free drainage seemed to have been the secret of success on that occasion.

We should not hesitate therefore, as surgeons, to hope for a good result sometimes, even in the most desperate cases and there is little doubt that a new study of the conditions predisposing to traumatic epilepsy may lead up to more encouraging surgery in the future.

DR. F. B. LA SALLE said that he felt that most surgeons would agree with Dr. Sachs in his conservative treatment in the first two cases reported in his most interesting communication. In regard to operating on the third case he could not feel that operation was made necessary by the fact that lacerated brain lay between the edges of the fissure in the skull; he had seen so many cases get well without harm from the necrosis of a lacerated brain that he no longer feared it. If the case was aseptic the necrotic tissue was absorbed and there was no abscess formation or any other harm resulting from it. In many cases of trephining more or less of the lacerated brain, either crushed against the edges of the bone or otherwise injured, was sewn up under the flap, and in his experience its presence had never resulted in harm if the case were aseptic. He thought it hardly fair to take the surgeons to task because less progressive work was being done in the field of cerebral than in that of abdominal surgery. In abdominal surgery we were dealing with the tissues which we could handle, cut, stitch and manipulate with safety, and with excellent results to our patients. In the surgery of the brain we were dealing with an infinitely complicated and important system of cells and fibers, the substance of which was soft and gelatinous, and incapable of intelligent manipulation. Until we had some different tissue to work in, or some different instruments to work with, the surgery of the brain would never be brilliant. The results of manipulative efforts upon the brain itself were apt to result in paralysis, worse sometimes than those which it was attempted to cure. It is an interesting fact that Cushing, who in this country is at present doing the most to broaden the field of cerebral surgery, is devoting himself not to the brain itself but to skillful operative treatment of the calvarium and dura. He endeavors to relieve pressure and so make life endurable, in cases of tumor of the brain, the majority of which he recognizes are incapable of removal. To the surgery of the skull and membranes, and therefore indirectly of the brain, he has given a new impetus in this country. Surgeons as well as neurologists, perhaps even more than some neurologists, are ready to attempt the relief of patients with cerebral lesions which give any promise of operative relief, and all conscientious surgeons endeavor to avail themselves of all modern improvements in technique, but no matter how great their interest or enthusiasm the field itself of cerebral surgery never can be wide or afford such satisfactory results as that of surgery of other portions of the body. It did not seem to me that the surgeons should be reproached for a state of things which was inherent in the nature of the subject, or blamed for not attempting the impossible.

DR. J. W. COURTNEY. I must confess that I am about as unenthusiastic over surgical intervention in recent cranio-cerebral traumas as any one could well be. For my own guidance in such cases I have formulated a very simple set of rules. If there be an obvious depressed fracture of the skull or other exter-

¹ See p. 185.

² See p. 170.

nal injury which may cause cerebral complications, I consider it a matter of surgical common sense to deal with them operatively at once. So far the skull proper and its coverings are important; but to spend any more time on this aspect of a given case is, to my mind, injudicious. Now, if there is a reasonable certainty that we are dealing with a practically uncomplicated middle meningeal hemorrhage it is likewise a matter of common sense to invade the skull and remove it. When we go beyond this in surgical procedure we are getting into very deep water.

Every one conversant with such matters knows that when the cranium and its contents have been exposed to violence, the end results are by no means confined to the point of actual contact. A traumatism may, for example, cause a supradural hemorrhage at the point at which it has expended itself with maximum intensity, and at the same time produce not only laceration, but a generalized contusion throughout the brain, which in itself is quite sufficient to produce death. In such a case we may remove the supradural clot and yet be totally unable to save life by reason of the other factors present in the case.

The trouble is that in a given case we get our minds fixed upon the most salient features and overlook complications which, of necessity, portend a fatal issue. It is doubtless of great importance to examine every case of head injury with the utmost thoroughness of which the neurologist is capable, and yet the sad fact remains that neurological indications are most untrustworthy. I have long since ceased to regard the condition of the pupils and of the reflexes as of any special importance. Even a hemiplegia coming on late in a case is extremely misleading as a diagnostic criterion. I do not regard the temperature as of a great deal of importance, and I find, on the whole, that it follows a pretty definite course in the various forms of recent brain traumatism. At the outset it is subnormal, as would naturally be expected, from shock. If the case is one of uncomplicated cerebral contusion I look for a range between subnormal and 101° . If hemorrhage is the sole factor in the case, I find it remains very near the normal mark, but if there is any degree of laceration I look for a steady upward trend almost from the beginning.

Now, to my mind, any result of recent traumatism to the cranium outside of depressed fracture or some wounds which may give access to germs, and any intracranial condition outside of an uncomplicated superficial clot, had better be left to the mercy of nature. To interfere in any other condition is, in my belief, equivalent to adding insult to injury.

I would like to call attention to the fact that in a great many cases of cranio-cerebral traumatism, the cerebral aspect of the case is not the only one, and that the neurologist and surgeon are apt, in their zeal, to overlook injuries elsewhere in the body which, of themselves, are quite capable of producing death. As to surgical technique, I must say that I am thoroughly satisfied with the present conditions as they obtain at the Boston City Hospital. If an operation is done with a maximum of celerity and a minimum loss of blood it is as good a combination as we can hope to secure.

In conclusion, I would like to quote from an article of mine on traumatic cerebral edema, written in 1899, in which I said the following: "Our knowledge of cerebral localization and function has been derived in part from experiment and in part from induction based upon the pathological findings in cases of brain neoplasms whose clinical expression has been accurately observed. In the majority of such cases the march of symptoms is slow and the portions of the brain, outside

of those immediately concerned in the growth, healthy. In animal experimentation, moreover, where certain portions of the cortex have been successfully removed, this has been done piecemeal, and the remaining healthy portions of the brain not traumatized. In these two facts lies the secret of the limitations of cerebral surgery. In the removal of neoplasms the most brilliant successes have always attended those cases where limited regions of the cortex and its underlying tissue only were involved. In the surgery of cerebral traumatism the most successful results have been obtained when the conditions underlying the immediate injury to the skull have most closely simulated those of a circumscribed cortical neoplasm, namely, uncomplicated middle meningeal hemorrhage. Upon this point there is a singular unanimity of opinion, even among the most rabid advocates of the trephine. Roberts, after comparing trephining to amputation of the metacarpal bone, descends to this bald statement of fact: 'Hence operation is contra-indicated in cases of intracranial bleeding that do not present the symptoms which are believed to be produced by accumulation of blood in either the cavity of the arachnoid or the space between the skull and dura mater.'

"We may invade the pleural and peritoneal cavities with impunity, but in the cranium we are thus far met by insurmountable barriers. The outgoing century has done much toward the advancement of surgical science, but in the field of nervous surgery alone there is much for the coming century yet to do."

Dr. P. C. KNAPP: I had hoped to present a patient whom Dr. Lothrop had operated on over five years ago, removing an enormous extradural clot over an inch and a half thick covering nearly the whole of the left cerebral hemisphere. The hemorrhage came from one of the veins emptying into the longitudinal sinus. A Babinski reflex was present within six hours after the accident and had disappeared within ten hours after the clot had been removed. The man made a perfect recovery, but later developed mitral disease.

I cannot agree with Dr. Courtney that only extradural hemorrhages should be operated upon. In every case of meningeal hemorrhage where there are sufficient symptoms to warrant even a strong suspicion of the condition, an exploratory trephining should be undertaken whether the hemorrhage be extradural or intradural. It is, of course, sometimes difficult to determine whether the hemorrhage is extracerebral or intracerebral, and harder yet to determine whether there may not be laceration of the cortex as well as a meningeal hemorrhage. Of two cases seen once on the same day one was a simple meningeal hemorrhage, the other a meningeal hemorrhage with cortical laceration. Both presented practically the same symptoms except that the latter showed marked delirium, but he was alcoholic.

Cases of head injury with symptoms at first too slight to suggest operation should be carefully watched, as serious symptoms may develop after a long period. Some years ago he had seen a patient in New Hampshire who three months before had fallen, striking his head. He complained of headache, but was able to attend to business and to make weekly trips to Boston until about a fortnight before. Then he began to be stupid, developed hemiplegia and became comatose. An operation showed an extensive meningeal hemorrhage, but the patient had grown too weak to survive it.

Dr. J. J. PUTNAM said that in the main he agreed fully with Dr. Sachs' excellent conclusions. He felt sure that even quite prolonged unconsciousness extending over several days was no proof that the patient would not recover, or that operation was called for.

In one case of this sort, where an elderly lady had struck her head heavily against a beam on going down a steep and dark flight of cellar stairs, a prolonged unconsciousness of this sort had apparently been lessened by a lumbar puncture and the patient's improvement dated from that operation, although there had been, previously, periods of oscillation in her condition, and at that time the outlook appeared very bad.

Dr. Putnam could not agree with Dr. Courtney that subdural bleeding was not a substitute for operation in certain cases. He had seen one patient, also a somewhat elderly lady, who had a fairly circumscribed and massive clot directly over the Rolandic area, resulting from a severe fall on the back of the head.

Dr. Putnam also said that if he understood Dr. Sachs rightly, he could not quite agree with him that it was unimportant to differentiate between focal symptoms due to hemorrhage and similar symptoms due to contusion and laceration. It might not be possible to make this diagnosis, but if it could be made, it would affect the decision as to operation.

He also thought that edema, due to imbibition of fluid on the part of the injured nerve-elements, accounted for many symptoms, and might mislead the observer as to the cause of increasing stupor, especially if coming on late.

Finally, the speaker thought that whereas an exploratory operation in which the dura was not opened might frequently be justifiable, it became a much more serious matter to go below the dura. Sometimes, notably in one case where the operation had consisted only in a free incision of the scalp, the speaker thought that the extensive bleeding had been of real service.

Dr. G. L. WATSON. Dr. Sachs has summed up the present status of operative interference very clearly. It is satisfactory to hail the decadence of the diagnoses, concussion and contusion. The deciding question is one which surely requires neurological as well as surgical knowledge for its solution, namely, Does a lesion exist in an accessible region, for the relief of which operation will be more effective than the unaided efforts of nature? Like other gentlemen present, I should dissent from Dr. Courtney's view that no subdural hemorrhage should be included in the class of lesions requiring operation. I should also disagree with Dr. Bullard, who apparently regards an unconsciousness of twelve hours' duration as in itself sufficient indication for operation.

The following symptoms are, in my opinion, in themselves not sufficient to justify operation: (1) Continued unconsciousness, not deepening. (2) Paralysis appearing immediately and not increasing. (3) Inequality of pupils. (4) Delirium and restlessness. (5) The presence of fever. I have seen an enormously dilated pupil disappear within twelve hours with no further symptoms, and perfect recovery follow. I have seen perfect recovery more than once after unconsciousness had been prolonged for days, and can recall many cases in which paralysis, immediately appearing, has cleared up without further complication. Time will not allow going into the details of these cases.

Among the conditions indicating operation I should include: (1) Deepening initial unconsciousness, or unconsciousness coming on after an interval and deepening into coma. If no other localizing sign accompanies, the seat of the injury should be chosen for operation. (2) Spread or increase of initial paralysis or the onset of paralysis after an interval, this points to hemorrhage. In the presence of this condition the possibility that bruising and edema alone are present does not suffice to contra-indicate operation. (3) Jacksonian attacks. (4) A dilated pupil on one side accompanied by paralysis or spasm upon the other

(middle meningeal hemorrhage). (5) Punctured or definitely depressed skull. (6) The question whether simple fissures and moderate depressions of the skull require operation demands, as Dr. Sachs has intimated, surgical rather than neurological judgment. I agree with him that the benefit of the doubt should be here given to operation in view of the many cases in which exploration of such injury reveals widespread and serious conditions likely to prove a future menace.

Dr. SACHS. In concluding this discussion I wish to thank the members of the Society for the consideration which they have given to the various points raised in the paper. It is impossible to respond to every one of the preceding speakers and I can do no more than select one or two remarks for final comment. I am glad to have Dr. Putnam call my attention to the importance of brain edema in traumatic cases, and I believe that up to the present time sufficient attention has not been paid to this special condition. I have no doubt that edema is responsible for many of the symptoms.

In spite of what Dr. Lund has said, I cannot hold the surgeons altogether blameless for the slow advances made in cerebral surgery, nor can I agree with Dr. Lund in this that very little can be done with a jelly-like mass such as the brain is, whereas so much could be done with the tissue as firm as is the gut. First of all, the surgeon is not called upon always to treat the jelly-mass, viz., the brain; he is more often called upon to treat the dura and this is surely more firm tissue, or firm enough, at least, to handle carefully and skilfully. It is of, at least, as much dignity as is the peritoneum, and we all know what the surgeon has done for this. Moreover, in the mere matter of maintaining the natural heat of the brain, the importance of which Horsley has dilated upon, compare the care given to the gut by the average surgeon with the absolute neglect of this one factor in the case of brain operations. Horsley is one of the few, if not, perhaps, the only one, who has given due weight to the maintenance of the natural heat of the brain during an operation. I cannot help, therefore, reiterating that up to the present time the gut has appealed very much more to the surgeon than has the brain and I believe that if brain conditions were studied as faithfully by the surgeons as have been the conditions of the abdominal viscera, the drainage of the cranial cavity would not be the stumbling block to successful operation which it appears to have been.

Granted that the conditions are not altogether favorable to great success in brain surgery, the speaker believes that by active co-operation of the surgeon and the neurologist far greater success can be obtained than has been obtained hitherto, particularly in affording relief in the cases of cerebral traumatism. On the whole, however, the conservative surgeon is the one whose record will be the best in the end.

Recent Literature.

A Compend of Medical Chemistry. By HENRY LIEHMANN, A.M., M.D., Professor of Chemistry in the Woman's Medical College of Pennsylvania and in the Wagner Free Institute of Science. Fifth edition, revised. Philadelphia: F. Blakiston's Son & Co., 1905.

The fact that this little work has reached a fifth edition is evidence of its popularity. It is, however, nothing more than an outline of organic, inorganic and medical chemistry, and it doubt will best serve its purpose as an adjunct to the didactic teaching of the author.

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MENTAL FATIGUE IN SCHOOL CHILDREN.

THE question of mental fatigue in school children is exciting the interest of both parents and educators. There has long been a feeling current that the ordinary school hours, including a morning and a part of the afternoon, were fatiguing and hence perhaps harmful to the ordinary school child. This, taken in conjunction with such study as is prescribed outside of school hours, has, in certain quarters, been looked upon as a distinct over-taxing of a developing child's mental powers. Fortunately, it is possible to determine with a certain degree of accuracy the facts in the situation, and this attempt has been undertaken by various persons.

A paper of interest in this connection is one by Dr. Joseph Bellei of the Board of Health of Bologna, Italy. For a number of years Dr. Bellei has been interested in the exact determination of the degree of mental fatigue which school children suffer. He has published several articles on the subject, the last of which appears in the *Lancet* of Feb. 3. In this research he has compared the mental fatigue produced in children by the afternoon session, when there is but a short rest between the work of the forenoon and the afternoon, with the conditions when this rest is greater. In one set of children the interval of rest was from twelve to quarter before one, and in the other from twelve to two. In carrying out his experiment Dr. Bellei used a method of dictation which he employed in 1900 under similar conditions, noting among other things the number of mistakes made at various periods of the day. For example, a first dictation was given to the children at two o'clock, another at quarter before three, and a third at half past three. Among

other interesting results of the research, it was found that at a boys' school, after three quarters of an hour of study, the children made a very considerably greater number of mistakes than at the moment of beginning the lessons. In general, the results showed that from the time of beginning the afternoon lesson at two o'clock to the closing of school at half past three the mistakes augmented by .521, whereas the percentage of boys who did not make mistakes diminished by 30.4, and the average number of mistakes for every boy increased from 1.01 to 2.62. Comparing these results with a very similar series of observations made in 1900, it was found that the work done in 1905 was slightly better than in 1900, but not sufficient to alter general conclusions. The same results were likewise obtained from investigations in girls' schools.

Summarizing the general results of the study, it appears that there is little difference between the quality of children's school work during the latter part of the afternoon session, whereas a rapid fatigue is manifest in the three quarters of an hour from two o'clock to quarter before three. It is therefore argued that the children become so tired after a short amount of afternoon work that their exercises are full of mistakes, in marked contrast to the conditions existing in the morning sessions. It furthermore appears that at the beginning of the afternoon session the children are for an exceedingly short time capable of doing their best work, but that fatigue almost immediately supervenes. These results are essentially confirmatory of those obtained under similar conditions in 1900, and Dr. Bellei thinks he is justified in assuming the probable correctness of his deductions, which are, as expressed also in a previous publication, "The work done by the children during the afternoon lessons is, on account of the great mental fatigue which it involves, of no advantage to their instruction, but is full of danger to their health."

This is possibly a somewhat strong statement of the case. We also incline to think that it might be well to distinguish between actual mental fatigue and lack of concentration, which might, under certain circumstances, account for mistakes made preceding the hour of dismissal. It requires but small experience with children to recognize the curious difficulty they have in fixing the attention upon a subject for any length of time, particularly if that subject be one of small inherent interest. Such a wandering of attention is, however, not to be forthwith construed as evidence of fatigue. Much of the best of our

modern teaching, which possibly can be less well carried out in public schools, consists in exciting the interest of children in the particular work in hand. If this be lacking, teaching becomes a practical impossibility after a short period of application.

In general, however, it is evident that the sort of work which this paper of Dr. Bellei presents is extremely useful in determining certain of the difficult problems underlying elementary education. In such investigations, however, the fact should not be lost sight of that many elements enter into a condition which may, by the tests employed, be regarded erroneously as pure fatigue. It would, for example, be interesting to observe the results in a class of children who were deeply interested in the work they were doing as contrasted with a class who had no such incentive and were looking eagerly forward to the relaxation at the close of school.

PREGNANCY AND DIABETES.

ALTHOUGH the coincidence of diabetes and pregnancy is of relatively frequent occurrence, the first recorded cases have only recently been brought to the notice of the profession, and it is only within the past few years that a number of articles have appeared on the subject. From a study of published cases it would seem to result that the existing conditions are so varied that it is a most difficult matter to draw any general conclusions.

It is well known that many women become temporarily glycosuric during their pregnancies and, for this very reason, it is a most delicate matter to decide where the glycosuria of pregnancy ends and where true diabetes begins. For the clinician, however, this question is of the highest import, because, in the first case, he is dealing with a benign and transitory affection where no treatment is required, while in the latter, on the contrary, the prognosis is a matter of much reserve, a severe diet must be observed and a constant watch kept for the well-known complications of diabetes.

Some time ago Rospie pointed out the differential diagnosis and made the following observations. In glycosuria of pregnancy the amount of urine is not increased, sugar is present in small amounts (25 cc to 6 gm. per liter), it is not accompanied by any of the usual symptoms of diabetes, such as polydipsia, boulimia, anorexia, loss of flesh, or severe disturbances of the nutrition. It makes its appearance with the preg-

nancy and disappears completely as soon as nursing is begun.

It has been upheld, and some cases seem to prove, that abundant, prolonged and repeated glycosuria of pregnancy might favor the occurrence of true diabetes in the future, but, however this may be, the prognosis of glycosuria of pregnancy, as met with in about 66% of all cases, is usually of a mild type and in no way compromises the general health of the woman and does not necessitate any medical treatment.

It should be distinctly understood that this does not apply to cases of true diabetes, and here again, the complications to which diabetic subjects are liable appear to have been very greatly exaggerated. For example, all diabetic females are not necessarily sterile, as has been upheld by some authorities, and so long as no lesions of the uterus or adnexa exist, which ordinarily prevent conception, pregnancy is always a possibility. When this has taken place, its evolution will depend largely on the form of diabetes present.

In the mild types of the disease gestation will go on to term in a normal way, but in the acute and sub-acute types, abortion or premature labor is to be feared.

The post-partum is usually prolonged, the vitality of the product of conception is frequently low and the fetus may die in utero or be born between the seventh and ninth months in a weakened condition.

In the majority of cases there is a calm in the disease during the first half of gestation and then suddenly an aggravation of the pre-existing symptoms takes place during the seventh to the ninth month. It is also at about this time that the accidents due both to pregnancy and to the diabetes arise, and it is safe to say that their prognosis is exceedingly bad.

These accidents more especially consist in hemorrhages, which may be so profuse as to cause severe anemia and thus favor infection, which often results in loss of life. Infectious processes usually supervene after labor and in no way differ from those arising in females who are not diabetic. There is, however, a point to be noted, namely, that of sudden death from syncope. This usually occurs from the third to the fifth day post partum and the cases long since collected by Duncan tend to show that diabetes in the pregnant woman may result in fatal consequences. Out of 15 cases, 11 ended in death of the patient shortly after delivery, in four an attack took place three to four days after labor, while in one death occurred within from six to eight months after

wards, but could not be directly attributed to the pregnancy.

The question of allowing a diabetic subject to nurse is of considerable import, but here again no absolute rules can be formulated. It can only be said that, in the interest of the child, nursing may be allowed when the diabetes is slight and when no other affection in the mother contraindicates it, such as anemia, tuberculosis and so forth. For that matter nothing is easier than to obtain an exact idea of the condition of the mother's nutrition, and should it become affected and the diabetic process aggravated, the infant must be taken from the breast.

MEDICAL NOTES.

RESTRICTIONS ON THE USE OF X-RAYS. — At a recent meeting of the French Academy of Medicine, on motion of M. Chauffard, it was unanimously voted, after a full discussion, that the medical application of x-rays by persons who were not doctors of medicine, *officiers de santé*, or duly qualified dentists, should constitute an act of illegal practice.

PROF. KARL VON NOORDEN TO SUCCEED PROFESSOR NOTHNAGEL. — It is announced that Professor von Noorden has been selected as the late Professor Nothnagel's successor in the University of Vienna. Professor von Noorden leaves the position of chief of the medical clinic in the Municipal Hospital of Frankfurt-am-Main to accept this chair in Vienna which must be regarded as one of the most important in Europe.

PRACTICAL DISINFECTION. — The Illinois State Board of Health has recently issued a circular entitled "Practical Disinfection," which concerns itself with disseminating knowledge regarding the best means of disinfection of infected premises. Several methods are discussed in detail and instructions given on the means of carrying them out. Insistence is very rightly laid upon the futility of imperfect disinfection. The circular should prove of value beyond the region which it is designed primarily to affect.

MEDICAL MEMBERS OF PARLIAMENT. — According to a report in a late number of the *British Medical Journal*, the recent English parliamentary elections have gone badly for medical candidates. Sir Michael Foster, Dr. C. F. Hutchinson, Surgeon-General Evatt and Dr. J. Court have all failed to secure election. On the other hand, Mr. R. J. Price, Dr. V. H.

Rutherford, Dr. Ronald Rainey and Dr. Pollard, all standing as Liberals, have been successful in replacing former conservative members.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, Feb. 14, 1906, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 51, scarlatina 30, typhoid fever 7, measles 166, tuberculosis 34, smallpox 0.

The death-rate of the reported deaths for the week ending Feb. 14, 1906, was 20.68.

BOSTON MORTALITY STATISTICS. — The total number of deaths reported to the Board of Health for the week ending Saturday, Feb. 10, 1906, was 244, against 233 the corresponding week of last year, showing an increase of 11 deaths and making the death-rate for the week 21.38. Of this number 131 were males and 113 were females; 236 were white and 8 colored; 165 were born in the United States, 72 in foreign countries and 7 unknown; 58 were of American parentage, 155 of foreign parentage and 31 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 56 cases and 4 deaths; scarlatina, 28 cases and no deaths; typhoid fever, 4 cases and 2 deaths; measles, 182 cases and 5 deaths; tuberculosis, 49 cases and 37 deaths; smallpox, no cases and no deaths. The deaths from pneumonia were 35, whooping cough 3, heart disease 30, bronchitis 5 and marasmus 4. There were 16 deaths from violent causes. The number of children who died under one year was 43; the number under five years, 65. The number of persons who died over sixty years of age was 43. The deaths in public institutions were 89.

There were 2 deaths and 1 case reported from cerebrospinal meningitis during the week.

INDUSTRIAL SCHOOL FOR CRIPPLED AND DEFORMED CHILDREN. — A fair was held Feb. 14 and 15 in aid of the Massachusetts Industrial School for Crippled and Deformed Children.

ANNUAL MEETING. — The seventeenth annual meeting of the Boston City Hospital Alumni Association was held on Feb. 7. Interesting medical and surgical cases were shown in the amphitheater of the hospital between eleven and one o'clock after which about 125 men partook of an excellent luncheon kindly provided by the trustees.

The business meeting was held at the Hotel Tulleries at 6.30 p.m. The following officers were

elected: President, Dr. George A. Leland; Vice-President, Dr. George T. Tuttle; Secretary, Dr. William H. Robey, Jr.; Treasurer, Dr. William H. Prescott; Member of Executive Committee for five years, Dr. George L. West.

The president, Dr. Charles H. Williams, presided at the dinner. One hundred and thirty-five men were present.

The after-dinner speakers were Dr. Charles W. Eliot, President of Harvard University, Rev. Dr. George A. Gordon of the Old South Church, Mr. Harvey N. Shepard, Dr. David W. Cheever, Dr. Samuel J. Mixer of the Massachusetts General Hospital, Dr. J. Baptist Blake and Dr. George A. Leland, the president-elect. A song by Dr. Baptist Blake was given by Dr. Paul Thorndike. Mr. Fred Bancroft sang some Irish and English ballads.

GRADUATING EXERCISES OF MASSACHUSETTS HOSPITAL TRAINING SCHOOL.—The graduating exercises of the Training School for Nurses of the Massachusetts General Hospital were held in the new Out-patient building on Wednesday evening, Feb. 7, at 8.30 P.M. Dr. H. C. Walcott, chairman of the Board of Trustees of the hospital, presided and presented the diplomas to the graduating class. The class taking the full three years' course numbered 16 and those taking the thirteen months' postgraduate course numbered 10. Prof. Jeffrey R. Brackett of Simmons College made an address to the members of the training school and their guests who were present to the number of about 300. Professor Brackett laid especial stress upon the opportunity of the nurse in doing educational work among those with whom she is thrown in contact, and her chance as an individual in creating a sane and healthy public sentiment.

Miss Dolliver, superintendent of the training school, made a report of the year's work. After this the ceremony of the presentation of the diplomas took place. Music was furnished by the Albion Quartette.

After the graduating exercises there was a reception held on the floor above which gave an opportunity for reunions of many of the former graduates.

NEW YORK.

CHRISTIAN SCIENTIST NOT EXEMPT FROM JURY DUTY.—Holding that a Christian Science leader is not exempt from jury duty, Justice MacLean of the New York Supreme Court has imposed a fine of \$100 on John C. Lathrop for neglecting to appear at the December term of the court for

jury duty, on which he had been summoned. Lathrop, who is a prominent exponent of Eddyism, claimed that he was exempt on the same ground as practising physicians.

A CENTENARIAN.—Rebecca Dickson, known as the oldest negress in Greene County, died at Catskill, N. Y., on Feb. 9, at the age of one hundred and one years. She is survived by her husband, who was ninety-eight years old in September last.

POISONING BY WOOD ALCOHOL.—On Feb. 7 one military prisoner confined in the cells of Castle William, on Governor's Island, was killed and another made dangerously ill by drinking wood alcohol, which had been smuggled into the prison.

OPENING OF WILLARD PARKER HOSPITAL.—The new laboratory building and the remodeled Willard Parker Hospital of the Health Department, located at the foot of East 16th Street, were formally opened by Commissioner Darlington on Feb. 9, and the buildings were inspected by a large number of physicians to whom invitations had been sent. The new laboratory, which is considered one of the best equipped in the country, offers admirable facilities for pathological study and bacteriological research. It is a handsome building, with seventy well-lighted rooms. The Willard Parker Hospital, for diphtheria and scarlet fever, has been made fireproof and very considerably enlarged and improved.

ANNUAL MORTALITY IN STATE.—The last bulletin of the State Department of Health shows that during the year 1905 there were a little over 137,000 deaths in the state. The daily average of deaths was 376, as against 380 in 1903 and 350 in 1901. Allowing for the increase in population, the death-rate for 1905 comes to 17.1 per thousand, which is about the average of the past five years. It is a better showing, however, than in 1901, when the death-rate was 18.2. Pneumonia caused more deaths than any other one disease, the number attributed to it being 14,157, as against 13,531 in 1904 and about 9,000 in 1903. Pulmonary tuberculosis comes second as a cause of death. The mortality from cerebrospinal meningitis amounted to 2,566, as against 1,700 in 1904. Scarlet fever, after four years of high mortality, has suddenly decreased by 1,477, while diphtheria has the smallest number of deaths on record from that disease. Bacterial disease caused 8,870 deaths. The infant mortality was 27.54 of the total. There were 24,000

deaths of those more than seventy years old, and in rural districts one third the total mortality occurred in aged persons.

MEDICAL SOCIETY, STATE OF NEW YORK. — At the annual meeting of the Medical Society of the State of New York, which was held in Albany on Jan. 30 and 31 and Feb. 1, the plan previously agreed upon for the merging of the State Medical Association with that body was carried out. The State Association and the various County Associations now pass out of existence, while the general plan of their organization has been engrafted upon the State Society and the County Societies in affiliation with it. Every member of a County Society becomes by reason of such membership a member also of the State Society and is required to contribute to the support of the latter. The *New York State Journal of Medicine*, the monthly publication established by the State Association, is to be continued, and in it will be printed all the papers read at the meetings of the State Society. The following officers were elected: President, Dr. Joseph D. Bryant of New York (re-elected); First Vice-President, Dr. Herman R. Ainsworth of Addison, Steuben County; Second Vice-President, Dr. Frederic C. Curtis of Albany; Third Vice-President, Dr. Allen A. Jones of Buffalo; Secretary, Dr. Wisner R. Townsend of New York; Treasurer, Dr. Alexander Lambert of New York. At a public meeting held on the first night of the session addresses were delivered by ex-President Grover Cleveland and the Hon. St. Clair McKelway, of the Board of Regents, University of the State of New York.

Obituaries.

GEORGE RYERSON FOWLER, M.D.

DR. GEORGE RYERSON FOWLER, the eminent surgeon, died on Feb. 6, in the Albany Hospital, where he had undergone two operations for appendicitis with complications. While on his way to Albany on Jan. 29, to attend the annual meeting of the Medical Society of the State of New York, he was taken ill, and the same night the first operation was performed by Dr. Van der Veer. Dr. Fowler was born in Brooklyn, N. Y., on Dec. 25, 1848, and was graduated from Bellevue Hospital Medical College in 1871. His professional life was passed in Brooklyn, and for the first two years after his graduation he was on the staff of the Central Dispensary. He was the first visiting surgeon to the Bushwick and East Brooklyn Dispensary on its organization in 1878, and presiding officer of its medical staff until 1887, when he was appointed consulting surgeon.

For a number of years he was surgeon-in-chief of the Brooklyn Hospital, and at the time of his death he was attending surgeon at the Methodist Episcopal (Seney) Hospital and the German Hospital, and consulting surgeon to the Norwegian, St. Mary's, Bushwick and St. John's hospitals. He was also a member of the State Board of Medical Examiners. In 1877 Dr. Fowler was commissioned assistant surgeon, and in 1886 surgeon, of the 14th Regiment, National Guard of New York. In 1902, he was appointed surgeon of the National Guard, with the rank of colonel and brevet brigadier-general, on the staff of Major-Gen. Charles F. Roe. In 1885 he established classes for instruction in first aid to the injured at the New York State Camp at Peekskill, and this movement shortly resulted in the issuing of an order from the adjutant-general's office in Washington for similar instruction at all military posts in the United States. In 1890 the Red Cross Society of Brooklyn was organized, with Dr. Fowler as president, and the Society has done excellent work in instructing members of the police force how to act in cases of accident. In the Spanish-American war Dr. Fowler served as chief surgeon with Gen. Fitzhugh Lee, and he organized hospitals in Havana when that city passed into the control of our army.

Dr. Fowler was one of the founders of the Brooklyn Anatomical Society, its first secretary and later its president. Among the other positions in medical societies which he held were those of president of the Kings County Medical Society and vice-president of the New York Academy of Medicine.

He possessed remarkable skill as an operator and was regarded as a leading surgical authority, especially in abdominal surgery. Dr. Fowler was a man of indefatigable industry and was ever ready to give to the profession the benefit of his enormous experience. Consequently, he was a voluminous and highly esteemed writer on surgical subjects, and an elaborate treatise on surgery, by him, in two volumes, is now on the press in Philadelphia.

JOHN SLADE ELY, M.D.

THE death of Dr. John S. Ely of New Haven, Conn., occurred last week under peculiarly tragic circumstances. Shortly before his death he was thrown from a horse on a hard pavement, fracturing his skull and never recovering consciousness. An operation proved unavailing. Dr. Ely was one of the leading physicians of his city, and at the time of his death was professor of the theory and practice of medicine in the Yale Medical School. He received his education at the Sheffield Scientific School, graduating in 1881, and his medical training from the College of Physicians and Surgeons of New York, graduating in 1886. He was forty-six years old at the time of his death, and had established for himself an enviable position in the profession, both within and without his native city.

Miscellany.

A DEFINITION OF THE PRACTICE OF MEDICINE.

AN important advance has been obtained by the County Medical Society in securing from a court of record a definition of what constitutes the practice of medicine. The definition was framed by Judge Joseph I. Green of the City Court, who stated that he had searched the authorities of the state in vain to find one. It was as follows: "The practice of medicine is the exercise or performance of any act by or through the use of any thing or matter, or by things done, given or applied, whether with or without the use of drugs or medicines, and whether with or without fee therefor, by a person holding himself or herself out as able to cure disease, with a view to relieve, heal or cure, and having for its object the prevention, healing, remedying, cure or alleviation of disease." This definition formed part of Judge Green's charge to the jury in a case in which a woman who sought to recover \$2,000 for malicious prosecution from the County Medical Society, which had brought charges of illegally practising medicine against her. Before announcing his definition Judge Green said: "The court has examined the definitions which appear in the various dictionaries, both as to what is meant by the word 'medicine' and what is meant by the term 'practising,' and, having in mind the object of the statute, the court has undertaken to charge in this case what the court deems to be the practice of medicine within the meaning of the statutes and the meaning of the law in this state." The case began nearly four years ago when the Society brought proceedings against the woman, who advertised in the papers to cure acute and chronic disease. Her treatment consisted of manipulation of the spine and general massage, and she accepted a fee of \$2 from several agents of the Society who were sent to her as patients. When sufficient evidence had been secured against her she was arrested and held for trial in the Court of Special Sessions, but when the case came up the defendant was discharged on the ground that it was not proved that she had given any drugs. She finally brought suit for malicious prosecution in the City Court, where, on the strength of Judge Green's charge, the case was decided against her. It is stated that this is the first case of the kind which the County Society has had to defend in five years, although during that time it has prosecuted hundreds of illegal practitioners.

COMMITTEE ON HOSPITAL ORGANIZATION IN NEW YORK.

At present the public hospitals of New York are partly under the management of the Health Department, partly under that of the Charities Department, and partly under that of the trustees of Bellevue and Allied Hospitals, and in response to a general demand from hospital

officials and charity workers the mayor has invited fifteen well-known citizens to act with the Commissioner of Health, the Commissioner of Charities, the Tenement-House Commissioner and the president of the Board of Trustees of Bellevue and Allied Hospitals as a committee to devise a plan of organization by means of which the hospital system may be more simply and advantageously administered. Ex-Controller Edward M. Groot has been requested to serve as chairman of the committee, and its medical members are Dr. Floyd M. Crandall, president of the County Medical Society, and Dr. Charles H. Chetwood. In his letter of invitation to these gentlemen Mayor McClellan states that the City of New York, through its several departments, is about to expend large sums of money for the extension of its hospital service. He goes on to say that the question of proper treatment of its consumptive patients has been widely agitated, with the result that at present both the Department of Health and that of Public Charities contemplate establishing hospitals for consumptives at great cost to the city, while the trustees of the Bellevue and Allied Hospitals also propose to care for this class of sufferers. In view of these extensive plans for the future he considers it most important that the present system should be investigated and improved, to the end that a general scheme of administration may be adopted which will insure to the city a thoroughly practical and satisfactory method of developing its whole hospital service.

THE EDIBILITY OF ANIMAL SPLEENS.

E. T. WILLIAMS (*American Medicine*, Feb. 10), in the course of investigations on animal spleens, found them good to eat. He cooked them in various ways and tested them on his friends. They contain $\frac{1}{2}$ gr. iron and $1\frac{1}{2}$ gr. phosphorus per ounce. When raw they have a pulpy consistency, which renders them unfit to eat. Heat coagulates their free albumin and gives them a consistency to be cut and chewed. They must be eaten quite fresh. They decompose rapidly and cannot be kept over night, even on ice. To be safely eaten they must, of course, be healthy. All infectious diseases are liable to affect the spleen. All diseased spleens should be rigidly excluded. Dr. Williams concludes with general remarks on the dietetic value of spleens as a blood-making food.

The number of spleens available for food purposes is almost without limit. A rough estimate based on the United States Census Report reveals the fact that there are upward of 50,000,000 pounds of edible spleens thrown away yearly in the United States. This includes the spleens of cattle, hogs and sheep. An ox spleen weighs upward of 2 lbs.; a hog's spleen about 1 lb.; a sheep's spleen 1 oz., on the average. It is worth to see what an enormous amount of good food is thus wasted every year. The commercial value of these spleens reckoned at ten cents per pound would be about \$5,000,000 per annum.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, FEB. 3, 1906.

| CITIES. | Reported deaths | | CITIES. | Reported deaths | |
|------------------------|-----------------|--------------------------|------------------------|-----------------|--------------------------|
| | In each. | Deaths under five years. | | In each. | Deaths under five years. |
| New York | 1,434 | 460 | Quincy | 5 | — |
| Chicago | — | — | Waltham | 3 | 1 |
| Philadelphia | 571 | 193 | Glocester | — | — |
| St. Louis | — | — | Pittsfield | 6 | 1 |
| Baltimore | 218 | 49 | Brookline | 4 | — |
| Cleveland | — | — | North Adams | 3 | 2 |
| Buffalo | — | — | Chicopee | 5 | — |
| Pittsburg | — | — | Northampton | 1 | — |
| Cincinnati | — | — | Mettord | 3 | — |
| Milwaukee | — | — | Beverly | 5 | 2 |
| Washington | — | — | Hyde Park | 1 | 0 |
| Providence | 66 | 14 | Newburyport | 3 | 1 |
| Boston | 233 | 39 | Leominster | — | — |
| Worcester | 26 | 12 | Melrose | 2 | 1 |
| Fall River | 32 | 18 | Woburn | 7 | 1 |
| Cambridge | 41 | 6 | Marlborough | 2 | 0 |
| Lowell | 28 | 14 | Westfield | 2 | — |
| Lynn | 18 | 3 | Peabody | 1 | — |
| New Bedford | 22 | 7 | Revere | 3 | — |
| Springfield | 17 | 3 | Clinton | 3 | 1 |
| Lawrence | 29 | 10 | Attleborough | — | — |
| Somerville | 22 | 5 | Adams | — | — |
| Holyoke | 10 | 3 | Gardner | 3 | 2 |
| Brookline | 13 | 3 | Milford | — | — |
| Malden | 23 | 5 | Weymouth | 1 | 1 |
| Salem | 13 | 4 | Frammingham | — | — |
| Chelsea | 16 | 6 | Watertown | 2 | 1 |
| Haverhill | 9 | 1 | Plymouth | 2 | — |
| Newton | 6 | 3 | Southbridge | — | — |
| Fitchburg | 11 | 5 | Wakefield | 3 | — |
| Taunton | 6 | 1 | Webster | — | — |
| Everett | 7 | 3 | | | |

CHANGES AT THE BOSTON CITY HOSPITAL.

RESIGNATIONS.

DR. AENEAS POST has resigned as senior visiting physician at the Boston City Hospital.

DR. FRANK W. DRAPER has resigned as medico-legal pathologist.

DR. EDWARD T. TWITCHELL has resigned as physician to the Convalescent Home.

APPOINTMENTS.

DR. H. L. BURELL has been promoted as senior visiting surgeon.

DR. GEORGE H. MONKS has been promoted as junior visiting surgeon.

DR. F. B. LUND as first assistant visiting surgeon.

DR. F. J. COLTON as second assistant visiting surgeon.

DR. DAVID CHEEVER has been appointed third assistant visiting surgeon.

DR. WILLIAM H. ROBEY, JR., has been appointed medical registrar *vice* Dr. J. N. Cullidge resigned.

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING FEBRUARY 10, 1906.

D. N. BERTOLETTE, medical director. Commissioned medical director, with rank of captain, from April 5, 1905.

H. G. BEYER, medical inspector. Commissioned medical inspector, with rank of commander, from April 5, 1905.

J. E. GARDNER, medical inspector. Commissioned medical inspector, with rank of commander, from Dec. 17, 1905.

C. M. DEVALIS, J. C. THOMPSON and E. L. BENTON, surgeons. Commissioned surgeons, with rank of lieutenant-commanders, from March 3, 1905.

W. M. CARTON, surgeon. Commissioned surgeon, with rank of lieutenant-commander, from March 12, 1905.

F. E. McCULLOUGH, surgeon. Commissioned surgeon with rank of lieutenant-commander, from June 9, 1905.

F. M. FURLONG, surgeon. Commissioned surgeon, with rank of lieutenant-commander, from June 20, 1905.

J. A. GUTHRIE, surgeon. Commissioned surgeon, with rank of lieutenant-commander, from Dec. 15, 1904.

R. T. ORVIS, surgeon. Commissioned surgeon, with rank of lieutenant-commander, from March 1, 1905.

D. B. KERR, surgeon. Commissioned surgeon, with rank of lieutenant-commander, from April 5, 1905.

G. L. ASGAR, surgeon. Commissioned surgeon, with rank of lieutenant-commander, from April 24, 1905.

R. B. HOYT, passed assistant surgeon. Commissioned passed assistant surgeon, with rank of lieutenant, from May 8, 1905.

W. H. RENNE, assistant surgeon. Detached from the Naval Station, Cavite, P. I., and ordered to the "Elcano."

J. R. SYKES, assistant surgeon. Detached from the "Baltimore" and ordered to the "Oregon."

J. P. DEBRULE, assistant surgeon. Detached from the "Elcano" and ordered to the "Oregon."

F. H. S. DEAN, assistant surgeon. Detached from the "Frolic" and ordered to the "Oregon."

C. J. GRIEVE, assistant surgeon. Detached from the "Oregon" and ordered to the "Frolic."

J. M. STEELE, medical inspector. Commissioned medical inspector, with rank of commander, from Dec. 18, 1905.

WARREN TRIENNIAL PRIZE.

MASSACHUSETTS GENERAL HOSPITAL. — The Warren Triennial Prize was founded by the late Dr. J. Mason Warren in memory of his father, and his will provides that the accumulated interest of the fund shall be awarded every three years to the best dissertation, considered worthy of a premium, on some subject in Physiology, Surgery, or Pathological Anatomy, the arbitrators being the physicians and surgeons of the Massachusetts General Hospital.

The subject for competition for the year 1907 is on some special subject in Physiology, Surgery, or Pathology.

Dissertations must be legibly written, and must be suitably bound, so as to be easily handled. The name of the writer must be enclosed in a sealed envelope, on which must be written a motto corresponding with one on the accompanying dissertation.

Any clew given by the dissertation, or any action on the part of the writer which reveals his name before the award of the prize, will disqualify him from receiving the same.

The amount of the prize for the year 1907 will be \$500. No case no dissertation is considered sufficiently meritorious, no award will be made. Dissertations will be received until April 14, 1907.

A high value will be placed on original work.

HERBERT B. HOWARD, M.D.,
Resident Physician.

RECENT DEATHS.

DR. WILLIAM EDWARD SWAN of New York died on Feb. 4. He was graduated from the College of Physicians and Surgeons, New York, in 1890, and practised for a number of years at Saratoga Springs. At the time of his death he was instructor in diseases of women at the New York Post-Graduate Medical School and Hospital.

DR. RICHARD A. TERHUNE, a prominent physician of Passaic, N. J., died from intestinal cancer on Feb. 5, at the age of 77 years. He retired from active practice about ten years ago, but was frequently called in consultation by his fellow practitioners, by whom his opinion was highly esteemed. His son is Dr. Percy A. Terhune, also of Passaic.

DR. NEWELL E. LAXTON of Newark, Wayne County, N. Y., died on Feb. 9. He was graduated from the College of Physicians and Surgeons, New York, 1876, and was fifty-four years of age. At the time of his death he was president of the village of Newark.

BOOKS AND PAMPHLETS RECEIVED.

The Submucous Window Resection of the Nasal Septum. By Prof. Gustav Killian. Translated by E. Edwin Foster, M.D. Reprint.

Poisoning by Wood Alcohol. Cases of Death and Blindness from Columbian Spirits and Other Methylated Preparations. Frank Buller, M.D., and Casey A. Wood, M.D. Reprint.

Manual of Pathology. Including Bacteriology, the Technique of Post-mortems, and Methods of Pathologic Research. By W. M. Late Coplin, M.D. Fourth edition, rewritten and enlarged. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1905.

Memoranda of Poisons. By Thomas Hawkes Tanner, M.D., F.R.S. Tenth revised edition by Henry Lehmann, A.M., M.D. Philadelphia: P. Blakiston's Son & Co. 1905.

Neurotic Disorders of Childhood, Including a Study of Auto and Intestinal Intoxications, Chronic Anemia, Fever, Eclampsia, Epilepsy, Migraine, Chorea, Hysteria, Asthma, etc. By B. K. Rachford, M.D. New York: E. B. Treat & Co. 1905.

Address.

JOHN HUNTER.*

1728 to 1793.

BY JAMES G. MUMFORD, M.D., BOSTON.

IN Scotland have arisen two men, — Hunter and Lister, — great men in the history of surgery. Hunter dominates the eighteenth century, Lister is conspicuous in the nineteenth, — a man destined to grow with the lapse of years. Hunter was greater than his contemporary, Swiss Haller, in his influence on the practice of surgery, though the balancing of great men against each other is profitless. Hunter, Haller, Morgagni, are the famous names for us in the eighteenth century. Morgagni, pathologist; Haller, physiologist; Hunter, pathologist, physiologist, surgeon. It was time for Hunter. Since sixteenth century Vesalius and Paré, experience had been accumulating, research had been extended, books had been written and knowledge had been diffused. Many able surgeons also had lived in this interval. There were active and highly intelligent practitioners. Many were popular teachers and reformers; they devised new instruments and procedures, they perfected old measures, they adopted and utilized new discoveries, they raised the standard of education, and they abolished the barber surgeon. But there was no prophet among them. Haller, indeed, was a marvellous investigator and teacher, but he was not a practical surgeon, and his discoveries came slowly to fruitage. John Hunter was the man for whom the profession waited.

Not long ago, a well-known teacher, in addressing an audience of physicians said "Surgeons in the past have devoted themselves to the studies of anatomy, pathology, bacteriology, but they have neglected physiology. It is to the teachings of physiology that the surgeons of the future must turn for advancement in their art." He forgot John Hunter. An English writer has told us that to Hunter's sound teaching of anatomy, comparative anatomy and pathology, and to the methods he employed and demonstrated to Jenner, Cline, Cooper, Abernethy, Home, Physick and a host of others, the great nineteenth century school of English surgery owes its fame. All that is true, but Hunter did more than that. He was a great philosopher in the broad sense, as well as a student of the natural sciences. To this day his genius dominates and inspires our science. For nearly one hundred years the Hunterian Oration, instituted in 1813 by Baillie and Everard Home has perpetuated the work and teachings of this man and has drawn lessons from his career. So our materials for a study are abundant, and our accumulated knowledge of him is great.

John Hunter was a Scotchman, of good, robust, middle-class stock. He owed a good deal to his ancestry, probably; certainly, many of

his immediate relatives distinguished themselves and showed the advantage of a clean and vigorous heredity. Hunter's father is described as a small farmer living on his own estate, Long Calderwood, in the parish of Kilbride East, Lanarkshire, and there John Hunter was born on the 14th of February, 1728, as he himself always stated. He was the youngest of ten, — five sons and five daughters. James was the eldest of the family; William, the fourth son, was ten years senior to John.

It is always interesting to learn something of a great man's formative years, but of John Hunter's youth we know little. He seems to have been a vigorous, out-of-doors lad, devoted to rural sports, little given to books, but neither indolent nor unobservant. Indeed, how could he have been either? The tireless student and keen observer of the fifties could not well have come out of a dull and obtuse rustic of the forties. They say his mother petted him, which is true, doubtless, for was he not the youngest of ten? And at seventeen he was sent to Glasgow to help straighten out the affairs of a good-for-nothing brother-in-law, — a bootless errand; but fools are not sent on such errands save by the Dr. Pruneros of this world. There is no doubt, however, that Hunter received scant schooling, and that in his young manhood he was ignorant of books, but he was vigorous and ambitious, and his horizon was not limited to the home-farm, for his elder brothers had gone out into the world, and of William he was proud from his youth up. A word about that particular elder brother.

William Hunter was born in 1718, and from childhood was destined for the church. He seems to have been an intelligent, sensible, attractive lad, eager in the pursuits of knowledge. At fourteen he was well advanced in his studies and was sent to the University of Glasgow. He became conspicuous there almost at once, but soon lost his purpose of being a clergyman. Meantime he had become intimate with William Cullen, six years his senior and a student of medicine. The intimacy bore fruit. Cullen, the future great teacher and clinician of Scotland, was astute even in his youth and recognized William Hunter's abilities. So, upon Cullen's urging Hunter entered upon the study of medicine; from his nineteenth year to his twenty-second he was an inmate of Cullen's house. The next year, 1741, he went on further study at Edinburgh, and then went to London to broaden his education and find a wider field for practice. It was a courageous undertaking and marks the man. Scotchmen were then few in London. George II. was still living, Lord Bute did not come to power until two years later, and Englishmen had not yet learned to recognize that the king's favorite kept in his pocket all the offices and all the honors for his favorites, and men from beyond the border.

When William Hunter went to London he had to depend upon his little family for the necessary gifts of brain power, a good education, and an introduction to Dr. James Douglas, an anatomist

* A portion of the introductory chapter on the History of Surgery in the forthcoming System of Surgery, edited by Dr. W. W. Keen.
Read before the Boston Society for Medical Improvement, Jan. 8, 1906.

and obstetrician of some note. Douglas took a fancy to him at once; he received him into his house, made him tutor to his son, employed him as a prosector, secured for him a position as surgeon's pupil at St. George's, and procured for him first-class anatomical instruction under Dr. Nicholls. Douglas died, unfortunately, in the following year, but Hunter continued to live for a time in his family, and rose rapidly in professional esteem. He soon began lecturing on surgery and anatomy, and proved himself one of the ablest and most popular teachers in England. In 1747 he became a member of the Corporation of Surgeons; and in 1748 made a medical pilgrimage on the Continent. Then gradually he gave up surgery, to devote himself to obstetrics, anatomy, physiology and general practice. Late in 1748 his brother John joined him in London and in 1750 he received the degree of M.D. from Glasgow, his alma mater. He was now well launched upon his life work, and there for the present we leave him, with this reflection, that his training and career were quite other than those of his more famous younger brother. He was an accomplished student and a university product. He was bred up in the best traditions of his profession. He was agreeable, spirited, interesting; an effective public speaker and a popular, inspiring, lucid teacher. Dignified, but apt, brilliant and convincing in conversation, he was the friend of eminent men from his first coming to London. The best professional society frequented him; he became a member of learned bodies and he held the respect and friendship of men of all ranks in that eighteenth century England.

John Hunter, such a rough lad as we have seen, went up to London, to his brother William, in the autumn of 1748. He was twenty years old. He went to London of his own motion, stimulated by the growing reputation of his brother and his brother received him kindly. One may fancy the intercourse of this ill-mated pair, but William seems always to have been patient and generous. Such discord as arose was John's doing mostly. The lad was a bear, and very much of a bear he remained to the end of his days, — jealous, rude, outspoken, much self-centered, intolerant; of an ungovernable temper, given to very naughty language, frequent with oaths. In his youth boisterous, a hard drinker and worse, he was fond of horse-play and addicted to low company. I fear; but always kindly, generous, impulsive; a stanch friend, a good hater. His professional ethics were second-rate, his contempt of empty dignities and humbug was shouted from the house-tops. But he was as sound and unreasoning a Tory as his contemporary, Dr. Johnson; and his patriotism was unswerving and articulate. He hated fiddlers, laced ruffles and Frenchmen.

John Hunter was not the first of the brothers to be attracted by William Hunter's work in London. A few years before this his eldest brother James had given up the law and entered William's dissecting room, where he came to be regarded as a promising anatomist, in the course

of a year. But his health gave out; he returned to the home in Scotland and died there. John Hunter was physically sound, — fortunately for him and for us. He plunged into his work with enthusiasm and he clung to it for forty-five years. His brother William found employment for him at once, preparing a dissection of the muscles of the fore-arm in anticipation of his lectures which began three weeks later. The young man had had no previous acquaintance with anatomy, but succeeded so well that he pleased his elder, who continued to encourage him in such studies, until at the beginning of the second session he was given charge of the dissecting room and the instruction of the pupils. So he went on. It is easy to see where he got his knowledge of anatomy, but just where he acquired early that broad knowledge of the allied sciences and of general medicine is not so obvious. John Hunter used to assert, and writers have continued to tell, how he was without training in letters, and was ignorant of what his predecessors and contemporaries did for the science of medicine. It is hard unreservedly to accept such statements, especially when we know that in later life he was a constant associate of learned men and a valued contributor to their discussions. We know, too, that even in 1748 William Hunter was a companion of such men, who made his house a rendezvous, so the younger brother, from his twenty-first year, breathed an atmosphere charged with things good for intelligent minds, and doubtless was stimulated to read as well as to listen and to think. From the first he did his own thinking, though; there can be no doubt about that, as one sees from his givings forth. Few young men have acquired formed habits at twenty, so that we may believe these new friends helped to direct his energies and to stimulate his ambitions. At any rate, his brother had no intention that he should remain a mere hack, and so the year after John's arrival the youth was placed under the tuition of the famous Cheselden at the Chelsea Hospital.

It is worth our while to glance a moment at Cheselden, one of the most eminent of that school of ancient surgery which was passing; for the passing of which Hunter himself was to be in great measure responsible. William Cheselden was himself a pupil of William Cowper, an anatomist and surgeon of Stuart times, and a contemporary almost of Sydenham and Loeke. Cheselden was educated at St. Thomas's Hospital, became an able anatomist and a skillful operator while still a young man, and for more than twenty-five years was regarded as the leading surgeon in England. He perfected the lateral operation for stone; he was the first to operate for artificial pupil; he was a member of the Royal Society, surgeon to St. Thomas's, St. George's and the Westminster hospitals, and the last warden of the Barber Surgeons' Company, immediately before the separation of the surgeons and barbers in 1744. Moreover, he was a kindly, accomplished, forceful, well-bred man; a gentleman of the old school, our fathers would

have called him, an impressive character and a notable teacher. So there we have John Hunter, living with his brother William, the accomplished scientist, and learning to practise under Cheselden, the foremost surgeon in the country, — truly an admirable school for a rude country boy.

The young man's experience of teachers was to be varied further. In 1751, Cheselden retired from the Chelsea Hospital, the year before his death. Accordingly, Hunter transferred himself to St. Bartholomew's, where he became a pupil of Percival Pott, then in early middle age and vigorously at work. Pott was another admirable man, a man worth our acquaintance; a sound teacher, he was not yet known to fame, but was still in the enthusiastic, accumulating stage, when a man can do most for his pupils. He lived to be Hunter's rival and critic, but he always thought honestly, and fought squarely.

Hunter remained with Pott for three years, and then, in 1754, became surgeon's pupil at St. George's, where he was appointed house surgeon in 1756. Meantime, in 1755, his brother had entered him at Oxford, but he, himself, then at the age of twenty-seven, did not relish the idea, and never kept his terms. The tale is often quoted that years afterwards, Jesse Foot, a rival, disparaged him for his ignorance of the ancient classics. Said Hunter, "Jesse Foot accuses me of not understanding the dead languages; but I could teach him that on the dead body which he never knew in any language, dead or living." Hunter was never over-modest, and Foot was a foolish person whose jaundiced "Life of Hunter" you shall read with groans.

Hunter chose St. George's because he had decided to be a surgeon, and that hospital offered the best chance of future promotion. But he never neglected his anatomy in the midst of diverse other pursuits, and kept at work as pupil and tutor in his brother's dissecting room throughout these ten busy years. However little or much of a reader he may have been, he was a tremendous worker in his own line, — laboratory research; and we shall hear how he was content with four hours of sleep, scanty rations and little play. Even in those early years he was discovering things. Among other feats he solved the problem of the descent of the testis in the fetus; he traced the ramifications of the nasal and olfactory nerves; he tested experimentally the question whether veins could act as absorbents; he studied the formation of pus and the nature of the placental circulation, and, with his brother, he proved practically the function and importance of the lymphatics.

"All that brings us to 1759: He was now thirty-one years old; he had worked without ceasing in London for eleven years, and he broke down. That marks the end of his schooling and his youth. From now on we must think of him as the man of action, — army surgeon, collector, investigator, teacher, writer, practitioner and, towards the end, martyr to a fiery temper and a fatal, agonizing disease.

Hunter's break-down in 1759 did not result seriously, though it disturbed his friends and alarmed himself. He was thought to have incipient phthisis, and he determined to find work and a residence out of England for a time. So in the following year he secured a commission as staff-surgeon to Hodgson and Keppel's futile expedition to Belleisle, — the same expedition which Thackeray has rendered forever comic in his account of Harry Warrington chased by the dragons. Hunter returned unscathed, and the next year went to serve with the English forces on the frontier of Portugal. We cannot stop to learn of his army life except to note that for four years he was with the troops, and acquired a great experience in the treatment of gun-shot wounds. He came to regard the presence in the tissues of a bullet as not in itself harmful, — thus coinciding in opinion with his predecessor Paré. He was too intelligent and diligent a man to content himself with the mere discharge of his duties, arduous as they were, but was continually engaged in physiological and other researches. He studied the conditions of the coagulation of the blood, he continued his old anatomical work, and he collected a great mass of memoranda on inflammations. In those years, too, he began his exhaustive researches into the habits, functions and structure of plants and animals. He learned that digestion does not go on in snakes and lizards during hibernation, and that the creatures will die in that season if they are put through vigorous movements; so he was led to an interesting conclusion which he applied to his human patients; namely, that if the powers of a part are diminished through gangrene or local necrosis, stimulants are dangerous since they "increase action without giving real strength." Soon after his return from Portugal he wrote out a catalogue of his specimens, and recorded notes of about two hundred normal and diseased structures. He retired on half pay in 1763, at the end of the Seven Years' War, but those four years were not the least important for health and progress in his life, and he was wont to look back on them with satisfaction. The experience reminds one of what Darwin, Huxley, Beagmont, Reed and other distinguished men have known. There is place in the public service for scientific work of the highest type, as we have learned.

• We find Hunter, then, at the age of thirty-five, in London with a start still to make on a short allowance, but splendidly equipped in courage, ability and training for the task before him. He proposed to be a practising surgeon; meantime he must live. So he began teaching anatomy and operative surgery to private classes and renewed his acquaintance with the resurricane man. Such teaching was his forte. He never enjoyed formal lecturing; indeed, when he took up that work later he did so with dread. He began each course with embarrassment and hesitation, and used to fortify himself with a big dose of laudanum before his introductory lecture. Scant practice and a daily class would have left most men with abundant leisure, but Hunter had

no leisure in life. He began at once the further study of comparative anatomy, and for subjects obtained animals dying in the Tower menagerie and in travelling zoological shows. He worked when ill even. They tell how he ruptured his tendo-Achillis, and while so disabled experimented on the tendons of dogs. He devised the familiar operation of subcutaneous tenotomy, killed the animals at various stages of their convalescence and through those studies ascertained the method and course of tendon healing. Out of such work grew the modern operations of that nature. In 1767, he was made a member of the Royal Society, — a fact noteworthy, since he had as yet published but one brief paper, and his brother William did not receive the honor until several years later. Evidently the great ability of the younger man was already making itself felt. The next year, 1768, he was appointed surgeon to St. George's Hospital and a member of the Corporation of Surgeons, five years after settling to practice; and now he established that routine of daily life for which he was remarkable to the end. All great scientists have been workers, but Hunter worked in a fashion unknown to our incessant modern life even. He rose daily at five o'clock and without waiting for a decent toilet hastened to his private dissecting room. There he worked until nine o'clock, when he snatched a hasty breakfast. He was methodical. From breakfast time until twelve he received office patients, and at twelve promptly, no matter who waited, he went out to make professional calls and his hospital visit. He returned home at four and dined. He ate abstemiously and, for the last twenty years of his life, drank no wine. After dinner he slept for an hour, and at half past five went to work again. Those evening hours were his most effective hours. He kept at it incessantly until after midnight, going to bed between one and two in the morning.

He must have been a cheerful companion for his wife; for he married, of course, and in some fashion managed to beget and rear children. Mrs. Hunter was the daughter of a Mr. Home, a struggling army surgeon, and for this lady, in his early poverty, Hunter had to wait several years. He married her finally against the protests of his worldly-wise brother, whose opposition to the match is said to have been the beginning of that breach which finally separated the two men. John Hunter's wife was a good wife to him, though his selfishness and rough manners must have tried her sorely. She was a pleasant, social body, given to cakes and ale, and rather partial to those fiddlers and Frenchmen whom her husband abominated. Here is a sombre tale of social misadventure: "On returning late one evening, after a hard day's fag, he unexpectedly found his drawing-room filled with musical professors, connoisseurs and *other idlers*, whom Mrs. Hunter had assembled. He was greatly irritated, and walking straight into the room, addressed the astonished guests pretty much in the following strain: 'I knew nothing of this kick-up, and I ought to have been informed of it beforehand;

but as I am now returned home to study, I hope the present company will retire.' " He was a good, old-fashioned British husband, and his sprightly wife remained faithful to him, though he bullied her while he lived, and left her penniless when he died. Mrs. Hunter had a younger brother, Everard Home, twenty years Hunter's junior. The lad became a member of their household, studied surgery under his distinguished kinsman, was taken into his confidence, was made his assistant, partner and executor, grew to fame on his fame — Home was not without ability of his own — and made himself forever infamous, long afterwards, by burning a great collection of the Hunterian manuscripts in order to conceal his own literary pilferings, a scandal with which scientific London blazed in the early years of the last century.

In 1768, then, John Hunter found himself well established; he moved shortly afterwards into his brother's former house, and began to take house-pupils — many of them afterwards famous. Of such pupils were Jenner, Guy, Physick, Lynn and Carlisle. At St. George's he had Abernethy, Cline, Earle and Astley Cooper, and he taught those young men to work as he worked himself. Early in his career, Hunter recognized that, as yet, comparatively little had been done to explain the nature of disease, its significance, its relation to health, its progress and its classification. Again we are confronted with the problem of Hunter's ignorance, of or familiarity with the accomplishments of other workers. Of course, he must have known the broad outlines, the common property of all physicians of his time, but he often seemed to feign ignorance; or what is more probable, he distrusted published conclusions, and had a pretty steady contempt for the capacity and observations of his fellows; not that he trusted himself implicitly, though he thought well of John Hunter; but he used to tell his pupils not to refer to what he had said the year previously, for he reserved to himself the right of changing his conclusions. At any rate, he perceived that medicine was in its infancy, and he undertook the stupendous task of revolutionizing ancient methods of study and launching science anew upon sound and rational lines. He began with fundamentals; he insisted upon a review of anatomy; and he taught that a thorough knowledge of embryology is essential to an intelligent pursuit of anatomy. Not only that, but he perceived the significance of the structure of animals of varying types, and of plants too. He had more than a suspicion of the evolution of species, and their origin, and insisted that a foundation in medical knowledge could be acquired from an exhaustive study only of the comparative anatomy of animal and vegetable life. In such studies and in such teaching he was unwearied. Read his works and you will find an astounding variety of evidence that he had anticipated a hundred modern discoveries, and had constructed hypotheses which have been adopted since as some of the important theories of recent research. Not content with such work

he was indefatigable in his investigation of physiological problems in man, animals and plants. In his own laboratory and with the rough tools at his command he performed experiments and reached conclusions not unworthy of a Harvey, a Haller, a Spallanzani, a Bichat or a Claude Bernard; and he inspired with a like diligence and enthusiasm the few choice spirits who had the wit to appreciate his greatness and the courage to follow his lead. They were young disciples. Among his contemporaries he had no following. What great man's contemporaries ever did become his followers?

Fundamental work was Hunter's great work. It is for such that we hold him in the front rank of all our benefactors. He saw the meaning of science more clearly than any man who had then lived; and he had the genius to make others see that meaning. That marks him as it marks the few rare spirits of his kind to whom men have given ear.

Hunter was not infallible. He made many mistakes; for he strove much and often, and such constant strivings end sometimes in error. But he was luminous and articulate to show the way, not hoping in one short life to reach the goal of all knowledge, but confident that from his Nebo his successors would advance upon the land which to him was vouchsafed as a vision only.

Hunter's method was rigid adherence to deduction founded upon observation and experiment, and his studies embraced an enormous field. Let us pass in brief review some of his better known contributions to science: In 1772, he published his first paper in the *Philosophical Transactions*, an essay on post-mortem digestion of the stomach, in which he explained that phenomenon as a result of the action of the gastric juice. In 1771 and 1778 appeared his essays on the teeth, whose natural history was explained and their diseases exhaustively considered. The work was an authority for three generations. In 1774, he read before the Royal Society a paper on "Birds," describing their manner of breathing; and a paper on the "Stomach of the Gillaroo Trout." During these same years he was busy with investigating the temperatures of animals under varying conditions, and his letters to Jenner, his constant correspondent, describe his elaborate clinical thermometer in a fashion worth your reading. Such investigations led to a delightful paper, which he read before the Royal Society in 1778, on the "Heat of Animals and Vegetables."

Two years afterwards, in 1780, Hunter presented to the Royal Society a paper which precipitated a bitter quarrel with his brother William, a quarrel which was healed a few days only before the elder's death, three years later. John Hunter's paper dealt with the structure and circulation of the placenta, with facts which he claimed to have discovered and established many years before, when working in his brother's dissecting room. Now William Hunter had published the same observations in his work on the gravid uterus in 1775. The he was given and

returned publicly between these two eminent men, and the Royal Society refused to print John Hunter's paper. He acted badly, whatever the rights and wrongs in the case may be. In this same year of 1780 Hunter read before the Society an account of a fetus, dead of smallpox; and a paper on the change of plumage in non-breeding hen pheasants. In 1782 there followed an essay on the organ of hearing in fishes.

Lectures, essays, letters, flowed from him continually during these years, but it was in 1785 that he made the observations and performed the operation for which he is best known to students of surgery.— Hunter's operation for aneurism. The story is interesting and illustrates the man. He happened in that year to be studying the mode of growth of deer's antlers. In July he had a buck caught, and tied one of its external carotid arteries. He observed that the antler which was nourished by the vessel became cold to the touch, and he debated whether this antler would be shed in due course or would be retained longer than usual. To his surprise he found, two weeks later, that the wound was healed and that the antler was again warm and vigorous. He supposed the ligature might have slipped, so he had the animal killed, when on examination he was interested to discover that the ligature held, but that through anastomosis and enlargement of small vessels above and below the occluded part, normal circulation had been restored to the growing antler. From this observation he was led to the conclusion that "under the stimulus of necessity" the smaller arteries are capable of rapid increase in size to perform the function of the larger.

Soon afterwards he had an opportunity of applying to a human patient this newly discovered law. There entered the wards of St. George's Hospital a man suffering from advanced popliteal aneurism, and in approaching the case Hunter debated whether to employ the old method of Antyllus, dissection and double ligature, or to follow the practice of Pott, amputation well above the aneurism, declared by Pott to be the only safe method. Hunter was conservative in his practice. He abhorred meddling surgery, and used the knife when other means had failed only. He felt the operation of Antyllus to be dangerous, and the method of Pott to be needlessly severe. He argued, however, that it would be reasonable to tie the femoral artery at that safe point where Pott would tie it in an amputation. He would not amputate, however, but would count upon the anastomosis for restoring circulation to the leg. He acted upon this reasoning accordingly, and with success. He tied the vessel in that intermuscular space, known since as Hunter's canal, and was gratified after several hours to find that the temperature of the foot had not fallen, but had risen above the normal. The patient procured satisfactory, and six weeks later, with a good and useful leg, was discharged from the hospital. The fame of this operation went abroad and aroused commotion. Promptly Frenchmen and

Italians claimed priority for their countrymen, while many English surgeons, headed by the veteran Pott, denounced the procedure as dangerous and unwarrantable. But it gained ground and became accepted in spite of loud words. Wise men waxed enthusiastic over it, and the Italian Assalini, who saw it first performed, testified that it "excited the greatest wonder, and awakened the attention of all the surgeons in Europe."

In 1783 Hunter had taken a leading part in establishing the "Society for the Improvement of Medical and Chirurgical Knowledge," and several of his papers were read subsequently before that body. In that same year he read to them an admirable paper on phlebitis,—the first paper we have which gives a satisfactory explanation of that affection; and in 1786 he gave to the world his famous book "On the Venereal Disease," a book long awaited by the profession, and an authority for fifty years thereafter. A few months subsequent to its appearance he published his work on the "Animal Economy,"—a collection of important papers consisting of many admirable anatomical descriptions and accounts of numerous original researches in physiology. In 1787, he gave to the Royal Society a paper on the "Wolf, Jackal and Dog," and a second paper, well illustrated, on the "Structure and Physiology of Whales."

In those years Hunter was overwhelmed with a thousand cares, and suffered much in health, so that his writings were few and at long intervals after 1787. In 1792, the year before his death, he contributed to the *Philosophical Transactions* a paper on bees,—the result of his observation on the hive bees, studied for more than twenty years. His last printed book, a book regarded at the time as the most important of his productions, was posthumous, the final editing being done by Everard Home; its title, "A Treatise on the Blood, Inflammation and Gun-shot Wounds, 1794."

Thus, in a few words, I have told something of the more notable things which Hunter did, but the story is very bare. It would be interesting to look out with him upon the world in which he lived, and to learn something of what other men were doing. The influences which bore upon him, and the condition of Europe in that last half of the eighteenth century, were vital and remarkable. Politics and literature, philosophy and science, were undergoing profound impressions. Hunter was no closet student, but a man keenly interested in what was doing, and for long much in the eye of the scientific world. All this must be a passing thought, however, but we may glance again at Hunter's life, his later years, and bring our story to a decent close.

One recalls certain facts, not altogether agreeable or attractive, minor faults of temper and habit. His body was grievously overdriven by an iron will, so that there resulted ill health and a vicious temper, with which he struggled for years. Certain it is that he suffered from angina pectoris, and found little relief. Over-exertion

brought on frequent attacks; and outbreaks of passion, or the attempts to suppress passion, were a constant dread to him. So far back as 1772 he began courses of systematic lectures which were a severe strain upon him, owing to his painstaking method and labored delivery. He published his lectures later, a standard work of immense learning and rare originality.

In spite of his labors and fame he never made much money, and what he did make went for specimens and apparatus. He was one of the greatest collectors ever known, and scoured the world through friends and messengers for the flora and fauna of all lands. Dozens of his letters to Jenner deal with the habits of the cuckoo; he sent a special expedition to the Arctic for specimens of the whale, and he paid five hundred pounds for the skeleton of an Irish giant.

I have said that it was Hunter's conception and teaching of science which mark him the great man, but to his immediate successors and to the casual reader of to-day he is best known for his museum. The Hunterian museum was a means to an end, but it was a magnificent means. Measured in bank notes it cost him upwards of \$375,000. After his death it was sold for \$75,000.

Hunter seems to have valued money as of service only to enrich his collection. Up to 1780 his income ranged between \$5,000 and \$10,000 a year. For a few years before his death it reached \$25,000, and in one year more than \$30,000. Most of his contemporaries regarded his love of collecting as an eccentricity, and his devotion to science as almost a mania. Few perceived the drift of his biological researches, and his investigations in comparative anatomy were looked upon as works of unprofitable curiosity. Even his friend, Sir Joseph Banks, the president of the Royal Society, wrote three years after Hunter's death, that he did not believe the Hunterian collection to be "an object of importance to the general subject of natural history, or, indeed, to any branch of science except to that of medicine."

The collection is estimated to have contained 13,682 specimens: In the physiological department, 7,295; in the pathological, 2,678, and 3,709 fossils. In the year 1800 it was acquired by the Royal College of Surgeons, since when it has been greatly increased, thanks largely to the efforts of its distinguished line of custodians, William Clift, William Home Clift, Richard Owen, J. T. Queckett and William Henry Fowler.

A writer has defined the scope of these labors of Hunter as the explication of the various phases of life exhibited in organized structures, both animal and vegetable, from the simplest to the most highly differentiated. Hunter did not employ comparative anatomy in subservience to the classification of living forms, as did Cuvier, but in order to ascertain the principle which animated and produced those forms,—a principle by virtue of which it appeared that all forms were allied to himself. He was continually asking himself, In what does life consist? He came to teach that "life is a principle independent of

structure, most tenaciously held by the least highly organized beings." Abernethy says he perceived life to be "a great chemist," a power capable of manufacturing a variety of substances into one kind of generally distributed nutriment, and of furnishing from this a still greater variety of dissimilar substances. Hunter found, in short, that there exists in animals, a latent heat of life set free in the process of death. "Mere composition of matter," said he, "does not give life; for the dead body has all the composition it ever had; life is a property we do not understand." As a bar of iron may gain *magnetic virtue* by being placed for a time in a special position, so, perhaps, the particles of matter arranged and long continued in a certain posture eventually gain the power of life. "I inquired of Mr. Hunter," writes Staple, "if this did not make for the exploded doctrine of equivocal generation; he told me perhaps it did; and that as to equivocal generation all we could have was negative proofs of its not taking place. He did not deny that equivocal generation happened."

Hunter held certain interesting views on geology. In water he recognized the chief agent for producing terrestrial changes; but he held untenable the popular notion that Noah's deluge might account for the marine organisms discovered on land. From the diversity of the situations in which many fossils and allied living structures are found he was led to infer that at various periods there had taken place not only repeated oscillations of the level of the land, lasting thousands of centuries, but also great climatic variations. The following striking paragraph of Hunter's is from Butler's essay: "If we were capable of following the process of increase of the number of the parts of the most perfect animal, as they first formed in succession from the very first to its state of full perfection, we should probably be able to compare it with some of the incomplete animals themselves, of every order of animals in the creation, — being at no stage different from some of those inferior orders; or in other words, if we were to take a series of animals from the most imperfect to the perfect, we should probably find an imperfect animal corresponding with some stage of the most perfect." In spite of involved phrasing, this thought, coming to us out of the eighteenth century, is supremely interesting.

Such were some of Hunter's labors and teachings. Like every genius he kept himself young and projected himself beyond his generation. As he advanced in years and grew to fame his fits of temper and intolerance of opposition increased upon him. It was his temper that killed him. He had become unavoidably concerned with medical politics, a field in which he was not calculated to shine. There came to be bad blood between himself and his colleagues at St. George's because he announced that they were neglecting the surgical pupils, and that thereafter, as he was doing most of the work and attracting most of the students, he should not turn in the fees to the common purse, but would keep them for him-

self. The governors of the hospital ruled against his decision, and provided in addition that thereafter no student should be admitted who had not been educated in medicine. This last rule seemed to be aimed at Hunter. It irritated him particularly because, soon after, there came up to London two young Scotchmen, ignorant of the new law, but seeking to be taken on as his pupils. He explained to them the situation but promised to do what he could. For that purpose, on the 16th of October, 1793, bent on seeing his Scotchmen through, he attended a meeting of the hospital board. Ottley tells the story: "Arrived at the hospital he found the board already assembled, and entering the room presented the memorial of the young men, and proceeded to urge the propriety of their being admitted. In the course of his remarks he made some observations which one of his colleagues thought it necessary instantly and flatly to contradict. Hunter immediately ceased speaking, retired from the table, and, struggling to suppress the tumult of his passion, hurried into the adjoining room, where, with a deep groan, he fell lifeless."

It is a pathetic and tragic scene. One fancies the winged words that may have passed, the taunt of that nameless colleague, who was probably in the right, the fury of Hunter, who was probably in the wrong. Rembrandt should have lived and added that picture to his collection. The fate of those two disappointed young Scotchmen has not been told.

Look back the hundred and thirteen years which have passed since Hunter died; think what his life meant for science and what is the estimate placed upon it by the average physician of to-day. The Englishmen have done their best for him, to be sure. Two of his influential relatives established the annual Hunterian Oration, which survives; but in the profession at large he is little more than a myth. A recent publicist says of him, that he stands for a book of surgical lectures, a treatise on venereal disease and the operation for aneurism. He stands for far more. Those things were by-products dropped from the seething laboratory of his brain. He means for us the first and the greatest English-speaking exponent of proper scientific research. He is the father of us all, — physicians, surgeons, laboratory students, — for he wrought mightily in all fields.

John Hunter inspired little personal affection or devotion, though he inspired admiration and respect, — for his was a vast genius. His disciples recognized the genius, few loved the man. With him it was not as with Hippocrates, or Paré, or Boerhaave, or Haller. It was a fiery soul, onrushing hence eager intolerant, unsparing of others as of himself, the body exhausted out of season, the task unfinshed, but his works do follow him. In modern days only have we come to see that sound knowledge and appreciation of science must be sought along those lines laid down through toil, criticism and weariness by the indefatigable John Hunter.

Original Articles.

STENOSIS OF THE PYLORUS IN INFANCY. THE REPORT OF A SECOND CASE SUCCESS- FULLY OPERATED UPON. REMARKS.

BY CHARLES L. SCUDDER, M.D.,

Surgeon to the Massachusetts General Hospital, Boston.

IN the BOSTON MEDICAL AND SURGICAL JOURNAL for Dec. 14, 1905, Dr. Townsend and I recorded a case of stenosis of the pylorus in infancy in which an operation had been successfully performed. The operation in the above case was done upon the fourteenth day of the child's life. Attention was directed to the fact that it was the youngest child successfully operated upon for this obstructive lesion.

I wish to record here a second successful case operated upon for this same lesion. I have added to this report certain facts concerning stenosis of the pylorus in infancy and a word upon the technique of the operation of gastro-enterostomy in young babies.

A. L., a patient of Dr. Hsley of Medford, Mass., was born Aug. 1, 1905, a breast-fed baby, apparently healthy, having a birth weight of six and three-quarters pounds. The baby vomited on the third day and continued vomiting each day despite careful modification of the food. The vomitus never contained bile. He was very hungry. The dejections were like meconium. He was somewhat jaundiced. Emaciation became marked. There was a tumor felt to the right and above the umbilicus. There was visible gastric peristalsis. When the child was twenty-three days old, because of the persistence of the above signs, a diagnosis of pyloric obstruction was made.

On the twenty-fourth day a posterior gastro-enterostomy was performed. A tumor, hard, smooth, without adhesions and about the size of the end of an adult thumb, was discovered at the pylorus. The intestine was empty and collapsed. The stomach wall was found to be considerably thickened and very firm. The stomach was larger than usual. The child recovered from the ether anesthesia rapidly; showed little or no signs of shock. He vomited twice the day of the operation, not at all on the second day, once on the third day, not at all on the fourth day, once on the fifth day and twice on the sixth day. After the sixth day there was no vomiting.

The feeding of the child was superintended by Dr. John L. Morse and was begun, according to his record, almost immediately after the operation Aug. 25. He was started with $\frac{1}{2}$ oz. of whey every two hours. This he took eagerly but vomited more or less for the first eight hours. The vomitus contained bile. There was little vomiting after this.

Aug. 26 he was given a mixture of equal parts of water and of modified milk containing 2% of fat, 5% of sugar, .25% of whey proteid and .25% of caseinogen, with 5% of lime water, unpasteurized; $\frac{1}{2}$ oz., every two hours. During the next two days the water was diminished until he was taking the full strength mixture. The bowels moved on the 26th. The first few movements resembled meconium but the last one, on the 28th, contained a few yellow specks. The weight on the 28th was 6 lbs., 12 oz.

Aug. 30 he was taking one ounce at a feeding, had gained 4 oz., and was having three yellow, digested movements daily. The food was then strengthened to 3% fat, 6% sugar, .50% whey proteids, .25% casein-

ogen, 5% alkalinity, unpasteurized; $\frac{3}{4}$ oz. of this mixture and $\frac{1}{4}$ oz. of water, twelve feedings as before.

Sept. 1 he was taking $\frac{1}{2}$ oz. of full strength mixture, was doing well in every way, having three normal movements daily, and weighed 7 lbs., 8 oz.

Sept. 6 he weighed 7 lbs., 12 oz. and was taking 2 oz. at a feeding. The food was then strengthened to fat 3.50%, sugar 7%, proteids 1%, lime water 10%; ten feedings of 2 to 2½ oz.

The striking things to all in the feeding of this case were that the baby was able to take a considerable amount of food so soon after the operation and bear it well. Of course, with an open passage between the stomach and intestine there is no reason why small amounts of food should be given. This has been the usual custom in the past. The feeding was on the same general plan as that of the new-born baby, that is, beginning with small amounts of a very weak food and rapidly increasing the amount and the strength of the food when it is found that the digestion is able to bear it. The great advantage of a proper amount of a suitable food during the first part of the convalescence over the usual starvation plan is shown by the rapid gain in weight, that is, a pound in nine days.

The baby is now four months and a half old, well and strong and weighs 14 lbs.

The accompanying photograph of the child was taken shortly after the operation, before he left the hospital. (See Fig. 9.)

Stenosis of the pylorus in infancy¹ was formerly inevitably fatal. It was not recognized a few years ago as a distinct disease. To-day not only is it possible to make a diagnosis of the condition but it is found to be of more frequent occurrence than was supposed and it is demonstrated to be amenable to operation.

Pyloric stenosis in infants commonly called "congenital stenosis of the pylorus" is a narrowing of the pyloric lumen caused by an hyperplasia of the circular muscle fibers of the pylorus. (See Figs. 1 and 2.) Associated with this muscle change is an increase in the size of the normal longitudinal folds of the mucous membrane. This change in the mucous membrane helps to augment the pyloric obstruction. Associated with these primary changes one finds constantly at autopsy and at operation certain secondary conditions, namely, the dilated or hypertrophied stomach wall and the collapsed intestine.

The facts upon which a diagnosis may be based are as follows: The child appears at birth healthy. A day or two after birth, or upon an average of seventeen days after birth, vomiting occurs. This is usually the first evidence of something wrong and should immediately attract attention. The vomiting is sudden, unexpected, persistent, appears usually after a feeding. The quantity vomited is equivalent to or more than the previous feeding. It is violent and projectile. The vomitus contains no bile, no mucus and no increased amount of hydrochloric acid. There are no evidences of fermentation in the vomited material. A cessation of this vomiting may be associated with a variation in the diet. The tongue is moist and clean. The breath is sweet.

¹ Scudder and Quinby: An analysis of 115 cases. Jour. of the Am. Med. Assn., May 27, 1905.
Morse and Murphy: BOSTON MEDICAL AND SURGICAL JOURNAL, Nov. 2, 1905, for microscopical appearances.



FIG. 1. Specimen of the pylorus and duodenum, showing the internal structure and the area of the pyloric stenosis. (Taken from the collection of the author.)



FIG. 2. Microscopic view of the pyloric stenosis, showing the thickened muscularis and the narrowed lumen.



FIG. 3. Pyloric stenosis. Vomiting. (Taken from the collection of the author.)



FIG. 4. Pyloric stenosis. Vomiting. (Taken from the collection of the author.)

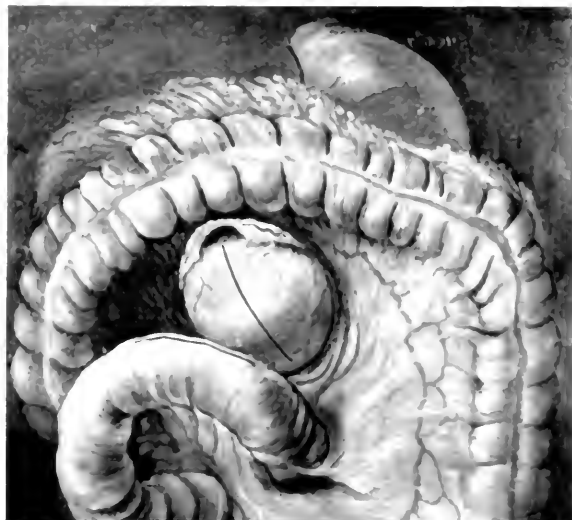


FIG. 5. Pyloric stenosis. Vomiting. (Taken from the collection of the author.)

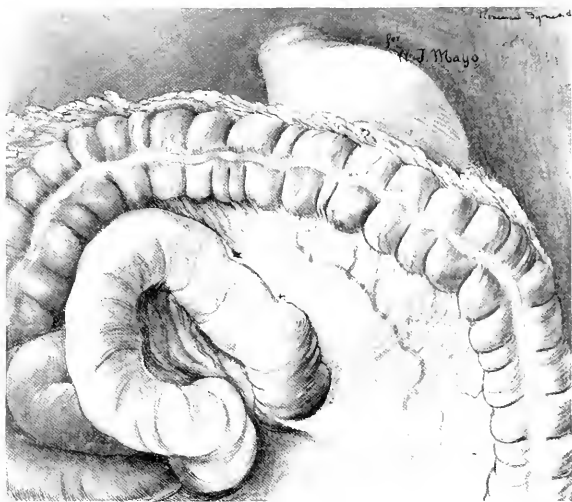


FIG. 7.—Appearance when the operation of gastro-enterostomy is completed. View behind transverse mesocolon. Note the edges of the opening in the transverse mesocolon sutured at two points to anastomotic region.
[From W. J. Mayo, *Annals of Surgery*, November, 1905.]



FIG. 8.—Operation of gastro-enterostomy completed. View from in front. The anastomotic opening shows through. Note the position of this opening.
[From W. J. Mayo, *Annals of Surgery*, November, 1905.]



FIG. 9.—Photograph of the patient whose case is here recorded. Note ample abdominal incision.

The lips are not dry. The child is usually eager for food and cries with pain as the stomach contracts in its attempt to force its contents through the narrow pylorus. Signs of relief from pain appear after the stomach has been emptied by vomiting.

There is *visible gastric peristalsis* (see Figs. 4 and 5) which is especially noticeable immediately after feeding. A cursory examination may fail to discover this peristalsis. It may be simulated by contractions of the abdominal wall. Contractions of the transverse colon have been mistaken for gastric peristalsis.

A *pyloric tumor may be felt*. This tumor is the thickened pylorus itself and is about the size of a filbert. It is situated a little to the right and above the umbilicus. This tumor may be detected under ether, if not palpable without an anesthetic. There is an opportune time for feeling the tumor, namely, when the stomach is undergoing contraction soon after feeding. It may escape detection by being situated above the border of the ribs, concealed by the liver or the distended stomach. An enlarged gland may simulate it.

The child is constipated, little food passing the pylorus. The movements are meconium-like. The abdomen in the region of the stomach above the umbilicus is more or less distended, below the umbilicus the abdomen is sunken, corresponding to the collapsed intestine.

Cases of stenosis of the pylorus in infancy may be naturally arranged in two groups; those of almost complete obstruction and those of partial obstruction.

If a complete obstruction exists there will be little difficulty in making a diagnosis. On the other hand, cases of incomplete obstruction are often very difficult of diagnosis. The condition most likely to be confused with partial infantile pyloric stenosis is infantile indigestion. A discriminating interpretation of the symptoms present will make a diagnosis possible. The existence of positive signs of infantile dyspepsia, namely, the coated tongue, the offensive breath, the evidence of fermentation in the stomach, diarrhea, improvement under medical treatment and dieting and an absence of the positive signs of pyloric stenosis, namely, the characteristic vomiting, a palpable pyloric tumor, visible gastric peristalsis, will ordinarily make a diagnosis possible.

Prognosis — The prognosis of cases treated medically is almost universally fatal. Certain cases are reported by competent medical observers in which the diagnosis of pyloric stenosis has been made. These cases are said to have recovered under medical treatment, but as yet there is no evidence to prove conclusively that in any of these cases pyloric stenosis of the sort under discussion existed.

On the other hand, there are several instances in which the diagnosis of pyloric stenosis has been made, the cases have been treated medically and are said to have been cured, but the subsequent

autopsy or operation has proved that the condition remained practically unchanged.

I am inclined to think that those cases reported by competent observers as having been cured by medical means represent cases of spasm of the pylorus independent of actual anatomical narrowing of the pylorus. It is possible that these cases in which symptoms have been relieved represent instances of partial stenosis due to actual narrowing. Whether these cases have been cured permanently or not remains to be demonstrated.

Treatment. — The treatment of these cases has most often been by medical means, that is, by diet, opium, lavage of the stomach and careful feeding. The surgical treatment has been by pylorotomy, pyloroplasty, division, gastro-enterostomy and careful feeding.

Gastro-enterostomy is the operation of choice. Kocher's gastroduodenostomy subpylorica is physiologically the ideal operation. A "funny" cannot properly be performed under the physical conditions present, the pyloric tumor is too rigid.

Reasons for failure in surgical treatment have been two, first: The child was too weak to undergo successfully any operation, was brought to the surgeon too late; second: the technique has been faulty. Once too large a Murphy button was used. A neglect to excise the mucous membrane in the gastro-enterostomy stoma caused one fatal obstruction. Too long exposure of the preplaced intestine has caused death. One operator had a leaky suture. A perforation of the duodenum resulted after a Loreta operation in one instance. Over-manipulation of the intestines caused one death. The non-excision of the mucous membrane in a pyloroplasty resulted fatally once. In another case there was a kinking of the gut causing fatal obstruction; this followed a pyloroplasty. The earlier recognition of these cases will eliminate the first factor in the surgical failures. The purely operative technical errors are fortunately today avoidable. Even so, taking all cases operated thus far, and there are over sixty, more than half have been saved. The mortality of cases treated by medical means is over 90%.

The parts to be operated upon are very tiny as compared with the adult anatomy. Very delicate manipulation is necessary and it is safer to operate if especially light instruments are employed. The ordinary adult instruments are clumsy. Attention to the following details is important. An operation will almost always be an emergency procedure; consequently the ideal preparatory treatment may have to be curtailed. If there is opportunity, stimulating enemata of salt solution, 3*ss*. brandy 5*ss*. given several times during the day before operation will prove of value. If the stomach is dilated it should be washed with warm salt solution introduced through a No. 10 English soft rubber catheter. If the child has vomited shortly before the time of operation, but if the stomach is not much dilated the washing will be unnecessary. The skin of the abdominal wall should be cleaned first with alcohol.

water and soap and gauze rubbing, rinsed with sterile water and sterilized with warm alcohol (1-70). After the skin preparation is completed the baby should be thoroughly dried and placed on a blanket. The legs, arms and chest should be covered with sheet wadding held in position by small gauze bandages. The employment of a warmed operating table offers great advantages toward the lessening of shock.

Before the administration of the anesthetic every preliminary operative detail should be attended to so that there may be the minimum period of anesthesia. A skilled anesthetist should be employed. Complete anesthesia is necessary that certain accidents in technique may be avoided. Having confirmed the diagnosis the incision should be made large enough to allow of easy access to the parts sought, with a minimum of trauma to the wound edges. Gentleness in the manipulation of the parts involved is absolutely essential. No organs should be lifted from the abdominal cavity. If possible the liver, stomach, as a whole, and transverse colon should be pushed gently upward under the diaphragm while those parts of the stomach and the jejunum to be united are properly clamped. These clamped portions only are permanently exposed for the carrying out of the operative procedure. The remainder of the abdominal contents should be protected from loss of heat and soiling by a sterile towel.

The usual posterior gastro-enterostomy is done with thread and needle, practically the Moynihan method.²

In the case recorded in this communication and in the case recorded in this JOURNAL, Dec. 14, 1905, I made the anastomosis without jejunal loop as close to the origin of the jejunum as possible.

The seat of operation is well shown in the accompanying illustrations by Mayo in Figs. 6, 7 and 8. I did not employ the technique of piercing the attachment of the omentum to the stomach, illustrated in these plates. These plates are introduced here as they illustrate more accurately than any hitherto published, the seat of operation, the mesocolon sutures and the ideal situation of the stoma, after the completion of the operation.

The superficial sutures closing the abdominal parietes should be removed a little earlier than in the adult for they tend to cut out. The proper feeding of the baby after this operation is most important. I believe that the diet should be under the immediate supervision of one skilled in the feeding of infants.

Protection of the small infantile body from loss of heat, speed in operating, an ample incision, a minimum of trauma to abdominal contents and wound, the use of a delicate clamp to insure cleanliness and hemostasis, skilled feeding after operation, — these are the salient factors which will minimize shock after the performance of gastro-enterostomy in young babies whose normal resisting power is reduced by starvation.

THE "HOME SANATORIUM" TREATMENT OF CONSUMPTION.*

BY JOSEPH H. PRATT, A.M., M.D., BOSTON.

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SOMEONE has said, "There are two kinds of consumption — that of the rich and that of the poor. The former is sometimes cured, the latter never." This still indicates the feeling of most physicians. The attempt to cure tuberculosis in the homes of the poor has seemed well nigh hopeless. Here and there, however, solitary workers like Dr. Flick of Philadelphia have obtained admirable results even in the slums of a great city.

As Dr. Osler stated in his lecture before the Phipps Institute, "The problem of tuberculosis is in its most important aspects a home problem. The vast majority of all tuberculous patients must be treated in their homes."

The success of the sanatorium and climatic treatment of consumption is universally recognized. Yet the essential feature of the sanatorium treatment is careful regulation of the details of the daily life, and the essential feature of the climatic treatment is life in the open air.



FIG. 1. Street in congested part of Boston. Photograph taken in front of patient's house.

In warm climates and in cold, at low altitudes and at high, consumption has been successfully treated wherever the out-of-door life has been adopted, and the modern method of treatment followed.

Since 1891 Dr. Bowditch has been demonstrating at the Sharon Sanatorium that consumption can be successfully treated in this supposedly unfavorable climate.

Dr. Millet of East Bridgewater was the first to advocate out-of-door sleeping in a harsh climate. In January, 1900, he published an important paper which bore the significant title, "The Night-Air of New England in the Treatment of Consumption."¹ It would be well if the truths contained in Dr. Millet's paper could be impressed upon every New England physician called upon to treat this disease.

Last winter I became acquainted with the

² The technique of a posterior gastro-enterostomy. *Annals of Surgery*, September, 1904.

* Read before the Johns Hopkins Hospital Medical Society, Jan. 22, 1906.

¹ The Maryland Medical Journal, January, 1900.

methods used by Dr. C. S. Minor of Asheville, N. C., in carrying out the hygienic-dietetic treatment among private patients outside of a sanatorium. The regulation of the daily life, the discipline enforced and the results obtained by Dr. Minor compare favorably with those of the best sanatoria. I became convinced that it was possible to carry out the same system in the homes of the poor even in a crowded city. For the opportunity to submit my plan to a practical test I am indebted to the Rev. Elwood Worcester and to Emmanuel Church for financial support.

The reason that the results of home and dis-

her duties. She should be the family's wise counselor, kindly and tactful, yet a good disciplinarian.

The class should number but a few members; I think the limit should be twenty-five. It should never be forgotten that it is the individual, not the disease, that needs treatment.

We have been fortunate in having a small class and so we have come to know our patients not simply as, "this case of fibrous phthisis," and "that case of pyopneumothorax," but as "Elmer" and "Patrick."

The class began the first of July, 1905. Most of the applicants for membership were referred to us by the Out-Patient Department of the Massachusetts General Hospital.

The rule was established that no one would be accepted until the clinical diagnosis was confirmed either by finding the tubercle bacilli or by a positive tuberculin test. There has been, however, no difficulty in demonstrating tubercle bacilli in the sputum of all our patients on admission to the class.

Aid has been refused to none. Those who were too ill for home treatment have been visited by our nurse until admission could be secured to some hospital or until transferred to the District Nursing Association. We have placed consumptives in the Carney Hospital, the House of the Good Samaritan and the Free Hospital for Consumptives.

Admission to the class has not been limited to favorable cases. In fact, only one of the patients was in the incipient stage of the disease.

All of our patients have been poor. None could afford even the \$4.00 per week charged at the State Sanatorium. Not all the members are intelligent. Several are unusually stupid.



FIG. 2. View from roof of same house. Note abundance of light and air, and contrast the two pictures. On this roof the patient spent eighteen to twenty-one hours of the twenty-four.

dispensary treatment have been on the whole unsatisfactory is due to the lack of the careful supervision and the lack of the strict discipline maintained in sanatoria. The tuberculosis dispensaries have been a most potent factor in preventing the spread of the disease, and in educating the patients and the general public. But I believe relatively few cases treated by dispensary methods have been cured. This has certainly been the experience of my colleagues and myself in the out-patient department of the Massachusetts General Hospital, where the dispensary methods with the aid of the District Nursing Association have been employed for several years.

The difference between our method and that of the tuberculosis dispensary is essentially this: that the tuberculosis dispensary gives a small amount of care to a large number of patients, while we give a large amount of care to a small number of patients.

Our organization is known as the Emmanuel Church Tuberculosis Class. We sometimes speak of it as a home sanatorium, and it bears much the same relation to a sanatorium that a correspondence course does to a college course. Every detail of the daily life is supervised and strict discipline maintained. A nurse is employed who devotes her time to visiting the members of the class. I prefer the term "friendly visitor" to nurse, because it describes more exactly the nature of



FIG. 1. View from front of same house. Note lack of light and air, and contrast the two pictures. On this roof the patient spent eighteen to twenty-one hours of the twenty-four.

In the family of Zelek P., a Russian Jew, whose weight chart is shown, no one can write English, and his wife cannot speak English.

Before admission to the class, the patient is appointed a "friendly visitor" to a member of the class, and he is given the out-of-door life, and to observe the pro-

of the class. The truth of Brehmer's motto that "The most profitable work for a sick man is to get well," is impressed upon the patient. After the decision has been made to join the class a clinical history is taken and a complete physical examination made and entered on the clinical records. Once a month the lungs and sputum are re-examined. The patients are visited by the nurse as soon as they enter the class. Often before the decision has been made the nurse is sent to discuss the question with the invalid and his family and to determine whether it will be possible to carry out the open-air treatment in their home. If there be no roof, balcony, piazza, or yard available for the rest treatment in the open air, the family must move to a tenement that will enable the tuberculous invalid to spend the entire day and night out-of-doors. Our friendly visitor, Miss Strong, spent much time in seeking satisfactory tenements for our mem-

head out of the window of his bedroom. One of our class sleeps on a balcony, the others in tents placed either on the roof or on the ground near the house. Generally the tents have been loaned, as few of the members could afford to buy them. An ordinary 7' by 7' wall tent with a fly has been found satisfactory. This costs only \$7.25. Except the time taken for meals, bath and exercise, the entire day is spent in the recumbent or semi-recumbent posture. A comfortable reclining chair is furnished each patient.

The prescribed diet consists chiefly of milk, bread, fruit, butter and oil. Most of our patients drink two to three quarts of milk a day. In a few instances unsalted butter has been furnished free. Cotton-seed oil has been found to be a satisfactory and inexpensive substitute for olive oil.

For the first few weeks no exercise is allowed and later only when the temperature is normal the entire day. Then the exact amount of exercise is prescribed. The patient begins by walking five minutes in the morning and five in the afternoon. It is required that a watch be carried and the exact duration of the walk noted in his record book. After exercising the temperature is taken and recorded. If rise of temperature occurs or if the patient becomes tired the amount of exercise is diminished. If the patient continues to improve the exercise is gradually increased. Some of our patients now walk several hours daily. During the summer and fall our fever-free patients enjoyed the privileges of the Parker Hill Day Sanatorium.

An important aid in maintaining our strict hygienic regimen is furnished by the individual record book. The form of record adopted is that devised by Dr. Minor of Asheville. Every detail of the day is recorded: The food eaten, including the total amount of milk and oil taken; the number of hours out of doors; the temperature and pulse-rate, and the quantity and character of the expectoration. The patients now keep out-of-door life charts. This keeping of records serves to impress upon the members the importance of attention to detail in the treatment. It helps them to persevere in their monotonous life. We have found that it does not depress their spirits or cause introspection. It serves rather to keep up their courage. Most of the class take great pride in their records. Of course, if a patient were doing badly and losing weight rapidly, the individual record would be omitted.

A weekly meeting of the class has been held on Friday afternoons, formerly in my consulting room, now at the Massachusetts General Hospital. The record books are then inspected and the patient's weight, temperature, pulse and vital capacity are taken.

Expenses.—Emmanuel Church has paid for a special nurse, furnished tents, reclining chairs and all other necessary supplies. To a few of the members a small amount of money has been loaned and aid has been offered when it was necessary for a family to move to another tenement. A nominal fee of \$2.00 a month is re-



FIG. 4. Showing patient taking the rest treatment in her own yard. In the reclining chair she spends eight to ten hours daily.

bers. At the first visit the nurse examines the house and locality, obtains the social history of the case, ascertains the exact financial condition and gives whatever instruction may be necessary to prevent the spread of the disease. The first visit usually requires two hours or more. A detailed report of this is at once given to the physician in charge. Subsequent visits by the nurse are made as required. Usually the patient is visited daily or at short intervals, until the details of the treatment are understood and followed. It has been found that often repeated visits are necessary before some of the simplest rules can be fixed in the minds of the invalid and his friends.

On Jan. 5, 1905, the class numbered fifteen members, all but one of whom were sleeping out of doors. The single exception is a patient who would have done so had his landlord not prevented his putting a tent on the roof. At present he sleeps with his

quired from each patient. In some instances this has been remitted. The total expenses for the first six months ending Jan. 1, 1906, were \$513.00.

Miss Isabel Strong, acting as friendly visitor, gave her entire time to the work without pay during July and August. Dr. J. B. Hawes has assisted me in the medical work since the organization of the class. Recently Dr. C. S. Millet and Dr. N. K. Wood have associated themselves with us and Dr. G. L. Tobey has taken charge of the laryngological work.

Tuberculin has been used in a number of cases with apparent benefit. Pharmacotherapy has rarely been employed except for special conditions, such as constipation or diarrhea. In a few instances creosote and compound tincture of gentian have been used. Hydrotherapeutic procedures consisting chiefly of "Theilwaschungen," Priesnitz chest compresses and full-tub baths have been prescribed in every case.

Results. Of the nine patients who have been members of the class for three months or more, all but one show a gain in weight. One patient's weight has increased 39½ lbs. In five of the nine cases the disease has been arrested. The term "arrested" is used in the sense in which it is employed by the Committee on Nomenclature of the National Association for Study and Prevention of Tuberculosis in their classification.

WEIGHT TABLE OF ALL WHO HAVE BEEN MEMBERS OF THE CLASS FOR THREE MONTHS OR MORE.

| Name | Date of Admission | Wt. at Admission | Last examination | Wt. at examination | Gain | No. of Weeks |
|-------------------------|-------------------|------------------|------------------|--------------------|----------|--------------|
| 1. Minnie E., | July 3 1904 | 102½ | Jan. 12 1905 | 111½ | 11½ lbs. | 27 |
| 2. Elmer C., | " 12 1904 | 106 | " 5 1905 | 130½ | 24½ | 25 |
| 3. Zedek P., | " 12 1904 | 131½ | " 12 1905 | 171 | 39½ | 26 |
| 4. John H., | " 18 1904 | 131 | " 12 1905 | 153½ | 22½ | 35 |
| 5. Samuel T., | " 27 1904 | 112 | " 5 1905 | 165½ | 53½ | 21 |
| 6. Maria F., | " 29 1904 | 117 | " 12 1905 | 138½ | 21½ | 25 |
| 7. Samuel H., | Aug. 7 1904 | 125½ | " 12 1905 | 132½ | 7 | 22 |
| 8. William F., | Sept. 2 1904 | 115 | " 12 1905 | 166½ | 51½ | 19 |
| 9. Patrick C., | " 15 1904 | 120½ | " 12 1905 | 121 | 3½ | 17 |
| Average gain 19 10 lbs. | | | | | | |

ABSTRACTS OF THE CLINICAL RECORDS OF ALL WHO HAVE BEEN MEMBERS OF THE CLASS THREE MONTHS OR OVER.

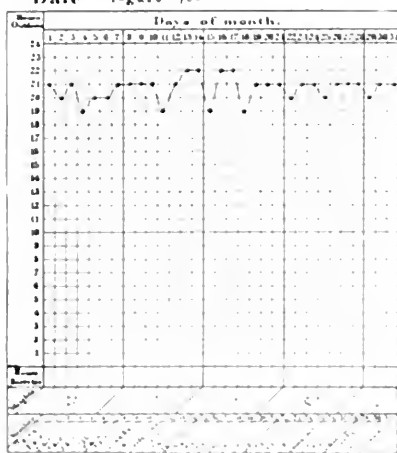
CASE No. 1. Minnie E., aged twenty-eight. Housekeeper. Ill since May, 1901. Cough; night sweats; loss of weight and strength; loss of appetite; frequent vomiting. Went to the Massachusetts General Hospital in January, 1905. Weight then 106½ lbs. Tubercle bacilli present in sputum. Joined the class July 3. Temperature at time of the first examination 98.8, pulse 100, respirations 26, weight 102½. There was dullness at the right apex, bronchovesicular breathing and many fine, moist râles. At the right base crackles were heard. In the left interseapular region slight dullness, bronchial breathing and râles at the end of expiration. Jan. 12, 1906. Weight 111½ lbs., temperature 98.6, pulse 84. She now feels strong and complains only of occasional nausea and vomiting. Practically no cough and no expectoration. No fever for four months. Last examination of chest Jan. 9. Only a few râles are now heard and these are sticky in character. They are present at both apices. On Dec. 22 sputum contained tubercle bacilli. Gaffky seed No. 2.

CASE No. 2. Elmer C., aged fifty-six. Painter. Came to Dr. Pratt's clinic at the Massachusetts Gen-

eral Hospital in July, 1905, complaining of loss of appetite and pains in the chest. He had had a dry cough for five years and expectorated some blood one year ago. For the week previous to visiting the hospital he had been troubled with night sweats. There had been no noticeable loss of weight; slight loss of strength. *Status præsens:* Thin man, bony framework prominent; weight 106 lbs. Temperature 99.6, respirations 18, pulse 92. Mucous membranes somewhat pale. Chest rather long and narrow. Dullness

OUTDOOR LIFE CHART.

Name *Elmer C.* No. *3.*
Locality *Essex*
Date *August 1905*



An outdoor life chart selected at random. It shows that Elmer C. was out of doors on no day of the month less than nineteen hours.

over the left upper lobe in front, and flatness behind. Over both sides of chest above spine of scapula breathing is bronchovesicular with prolonged expiration. Kroenig's isthmus is 2 cm. wide at the left apex and 3 cm. at right apex. Vital capacity is 2,225 c.c. Many medium-sized moist râles over both upper lobes during both inspiration and expiration, more numerous on left side, no râles over middle or lower right lobe. Over lower half of left scapula, especially near angle of scapula are a few crackles. S. lowered and anterior tortuous brachials. Trachea is free from dullness and sugar. Suggestion of diaphragm reaction. Sputum is mucopurulent. Tubercle bacilli present. Gaffky's seed, No. 3. Fluoroscope shows a shadow over the entire left lung darkest at the apex. Right lung clear. He regained strength rapidly and the cough entirely disappeared. Tubercle bacilli have not been found in the sputum for three months. Jan. 9. Patient looks healthy, skin ruddy, and mucous membranes are of good color. Weight 104½ lbs. Temperature 98.8, pulse 78, vital capacity 2,500 c.c. He has lost less than he has for years and weighs 100 lbs. more than he did when he came to the clinic. He walks four to five hours daily. Last examination of chest Jan. 14, 1906. Mucous membranes of chest and apex. No impairment of respiratory function of either lung. At left apex expiration is prolonged and flat

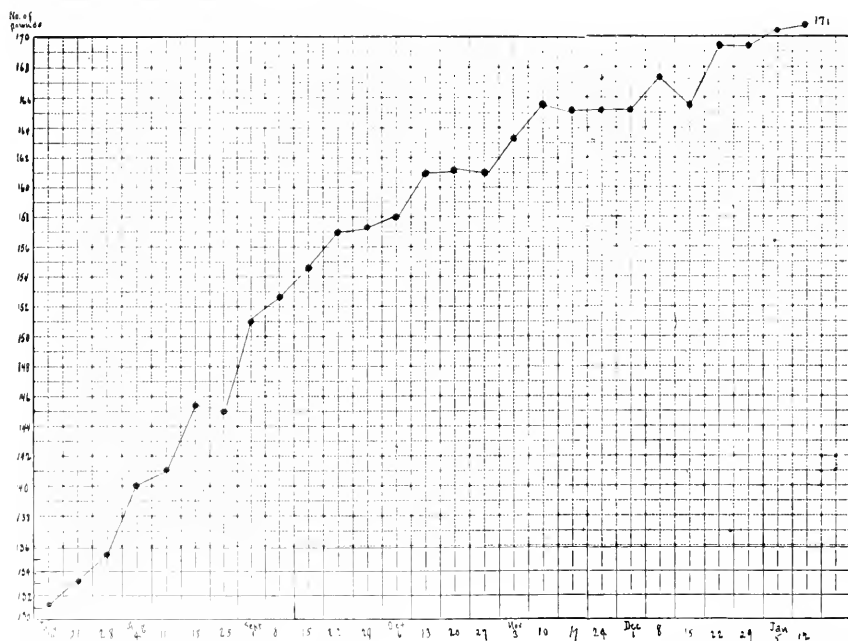
distinctly bronchovesicular. After coughing, a few subcrepitant râles were audible above the left clavicle; none were heard elsewhere.

CASE NO. 3. Zelek P., aged thirty-five. Tailor. Came to Dr. Pratt's clinic at the Massachusetts General Hospital in July, 1905, complaining of cough and pain in the right chest. For several months he had been troubled with a cough and increasing weakness. He had lost 3 lbs. in weight since January. On examination he was found to have a temperature of 101.4, respirations were 30 to the minute and the pulse 80. There was dullness over the right side of chest, front and back, shading into flatness at apex. Breath sounds were bronchovesicular over right upper lobe, where a few fine râles were heard. They were increased by coughing. Sputum contained many tubercle bacilli. — Gaffky scale, No. 7. He gained steadily

had a cough with considerable expectoration for three months; at times sputum had been streaked with blood. He had not lost weight; his appetite was good, and aside from the cough felt perfectly well. There were slight signs at the right apex, and the fluoroscope showed a shadow extending down as far as the third rib on the right side. There was a reaction to tuberculin and then for the first time Dr. Hawes found tubercle bacilli in the sputum. Examination, Jan. 2, 1906, revealed slight dullness and bronchovesicular breathing at the right apex. No râles were heard. He looked strong and healthy. Has had no cough for two months or more, and tubercle bacilli have not been found in his sputum since September. On Jan. 12, he weighed 153½ lbs., a gain of 22 lbs. since joining the class. His temperature was 98.4°, and his pulse 104, vital capacity 3,000 cc.

Weight Chart

Name Zelek P.



Weight chart of the member of the class who lived on the roof shown in Fig. 2. On Jan. 19, 1906, he weighed 171½, being a gain of 40½ pounds. He now walks three hours daily without fatigue.

during the summer and fall. He slept and lived on his roof in the crowded West End of Boston. For ten weeks he was allowed no exercise. His temperature became normal in September, and has remained so. On Jan. 12, 1906, he weighed 171 lbs., temperature was 98 and pulse 82. He has been free from all subjective symptoms for several months, but in the scanty expectoration tubercle bacilli are still demonstrable. Examination, Dec. 30, showed dullness, bronchial breathing and intense bronchophony at the right apex in front. A few râles were heard here, none elsewhere.

CASE NO. 4. John H., aged twenty-two. Brass finisher. Came to the clinic in July, 1905. He had

CASE NO. 5. Samuel T., aged thirty-seven. Motor-man. Cough of six months' duration. One attack of hemoptysis. A few night sweats. Lost 70 lbs. in weight during the past two years. Definite signs of phthisis were found at the right apex, and the sputum was loaded with tubercle bacilli. At the time of examination, July 27, 1905, his weight was 142 lbs., temperature 98.2° and pulse 116. Improvement followed treatment. He remained in the class six weeks and gained 14½ lbs. He then returned to his old home in New Hampshire, where he remained a month. While there he over-exerted himself and the tuberculous process was lighted up. He rejoined the class on Oct. 27. He was then having afternoon

ferred to the Emmanuel Church Tuberculosis Class by Dr. Cabot in September. Pleurisy, January, 1905. Slight hemoptysis also in January. In July, 1905, cough began. Occasional night sweats, some pain in chest. He had lost about 20 lbs. in weight and felt weak and sick. Weight 145 lbs., temperature 101.5°, pulse 104. There were signs at the right apex and tubercle bacilli were found in the sputum. He has improved steadily under treatment. On Jan. 2, 1906, slight dullness at right apex; no definite rales heard. Jan. 12, weight 166½ lbs., temperature 98°, pulse 104. Slight cough persists; general condition good. Sputum examined on Dec. 22 contained numerous tubercle bacilli.

CASE NO. 9. Patrick C., aged thirty-three. Machinist. Came to Dr. Cabot's clinic at the Massachusetts General Hospital in August, complaining of shortness of breath. He had had a persistent cough since last winter. While in New York in June, 1905, he was suddenly seized with great shortness of breath, high fever and prostration. He has been quite sick ever since. Patient was emaciated. On examination there was found to be a pyopneumothorax of the left side and signs of phthisis at the right apex. Weight was 117, temperature 100.5°, pulse 84. An incision was made in the left side and considerable pus removed which contained tubercle bacilli. In September he was admitted into the Emmanuel Church Tuberculosis Class. On Oct. 13, 450 cc. greenish pus were removed, which greatly relieved the dyspnea. Temperature 100°, pulse 108. On Oct. 27, 1,080 cc. of fluid were aspirated and again on Dec. 19, 500 cc. were removed. He has continued to have slight fever. The physical signs have remained nearly stationary, but he has been weak and has had very little appetite. Jan. 12, 1906. His lips look bloodless. Left side of chest remains distended and flat. Weight 124 lbs., temperature 98.6°, pulse 92, vital capacity 1,100 cc.

COLD FRESH AIR TREATMENT OF PNEUMONIA. A CASE.*

BY W. P. NORTHRUP, M.D., NEW YORK.

Professor of Pediatrics in the University and Bellevue Hospital Medical College; Visiting Physician to Presbyterian and Foundling Hospitals, New York.

THERE are two reasons for the appearance of this report. *First*, it makes a favorable showing for fresh air treatment in a prolonged case of severe pneumonia. *Second*, we are privileged to learn how the treatment impresses the onlooker.

In this case the onlooker was an up-to-date oculist, a back-number general practitioner, a father who really thought this particular young boy was a little different from others. The said onlooker has been for years active in this society, and all who fear their patients will not consent to this radical change in treatment may wish to ask him questions. He is here and will answer.

History: F. V. F., thirteen years old, finished a bicycle ride without incident, without exposure or excessive fatigue. On the following day he came from school, having felt "bad" during session. At noon, however, he ate a good lunch with his father, and seemed perfectly well. In the afternoon of this day there was an abrupt onset of the following symptoms: malaise, persistent vomiting, severe headache. The throat was red, and no other local indications. The toxemia and nervous disturbances seemed marked,

but in a nervous boy of thirteen not exceptional. On the morrow, it was predicted, he would probably show tonsillitis.

On the second day no improvement, no diagnosis.

Third day: During the night the fever mounted, and in the morning all the symptoms needed for diagnosis were present. There was a temperature of 105°. Respiration-pulse ratio, 1 to 3, pain in the chest, nausea, transient delirium, restlessness, cough.

Character of the pneumonia: Clinically it was of grip type, wandering, prolonged, resolving without sputum. It began in the left lower, spreading gradually to the root, advanced to the upper posterior, then to the apex, spreading around in front. In short, it involved the entire left side.

The initial point of lesion was so attended with pleurisy and so solidly flat that empyema was expected, and when the fever, after a short decline, mounted again to maximum, the instruments were boiled for exploration. While they were boiling an examination disclosed the fact that the consolidation was clearing from below upwards, and that a new district was invaded in the upper lobe posteriorly. After a slight decline of fever again it was hoped that having seemingly invaded every portion of the left lung and taken twelve days to do it, there was about to be an end of extension and mental suspense. Alas, another sharp rise of temperature made certain interested persons look despondent. It was a question whether the process had now jumped to the other side. It had not. The spreading infecting agent had seemingly overlooked or forgotten one little place near the sternoclavicular articulation, to which it now, on the twelfth day, returned and incited the known cycle of pneumonic activity. It was attended with characteristic physical signs. The temperature again declined. By this time the tension of mind of the family may be easily imagined.

From the extent and character of the consolidation alone this is not to be considered a mild case. The fact is here dwelt upon for a purpose. Certain symptoms serve to further mark its severity. Among them are restlessness, nausea and vomiting, delirium described as muttering, or active, nearly all the time for twelve days, talking incessantly. Delirium was often violent, with fighting and attempts to escape from bed. Further symptoms were dry tongue, moaning in sleep, picking the bed clothes, risus sardonius, respiration irregular, pulse irregular, at times dirotic, face flushed, abdomen distended.

The temperature touched 104°-105° every day for nine days, fell a little from the tenth to the eleventh, mounted again on the twelfth, and remained normal after the thirteenth.

The respiration averaged 35 to 40, by exception reached 50 and more. The pulse was seldom above 120 and usually of good character. This was a great source of comfort. Truly the heart behaved well.

After a moderate internal sensation in one ear on moving his jaw, the ear began to discharge. This made an uneventful recovery, and did not seem to influence the temperature.

The foregoing description, it is hoped, serves to determine the gravity of the case. No difference of opinion exists as to the depressing and exhausting effects of this type of pneumonia.

After condition: The patient recovered his appetite, his ability to sleep and go about the city, and was, to physical examination, quite well, lungs and ear, but not psychically. Delusions pursued him. Impressions previously acquired from

* Read before the New York County Medical Society, Jan. 22, 1906.

highly pictured stories came to his mind. In the bathroom's dark corners he saw queer objects. He prowled about the house in fear lest he should be surprised by lurking somethings. He shunned his old friends, his teachers and playmates and turned his face to the wall if they came suddenly upon him. It was fully three months before this wore off. During all this time he was well enough to walk in the park, and was eating and sleeping satisfactorily.

His condition reminded one of the post-typhoidal mental state associated with exhaustion, malnutrition of the cells and anemia. He had illusions, delusions, dysesthesia, a grinning, vacant look, nocturnal enuresis, anemia.

I may here happily remark that this fall a bright youngster with a gay dog in leash dashed up to me on the street, in a way that assured me that the former patient was as fine and fit as ever. He is now perfectly well, and I can believe the father still thinks him exceptional. Ask him.

Treatment.—From the first it was apparent that the patient was going to be very sick. He was a tall, thin boy, growing rapidly, and looked to the casual observer rather delicate. There is always a little embarrassment in attending the son of an old friend doctor. However, I must admit it was reduced to a minimum in the present case.

The bed's head was placed between two open sashes in a bay-window. The lower sashes were opened to their utmost, and the month was March (1905). On account of active delirium it was necessary to pass a cotton flannel bandage around one ankle and fasten it in a long loop to the iron bedstead. At times other precautions were necessary. The approved method of treatment required the windows to be wide open and quite unobstructed. The working rule was, Nothing between the nose and the North Pole.

The room was cold, perhaps 10° Fahr. The nurses wore heavy wraps, night and day. No one caught cold and before the end all fully approved the method of treatment.

The boy wore no oilskin jacket, had no extra cover over his chest, his arms were out. In fact, before the end of the first week, he was allowed to tear open his shirt at the throat, expose his upper chest or anything he wished to further his comfort. To him who shudders at this treatment, let me say, the father, whatever he thought, made no objection. If he and his wife filled with inherited traditions concerning blankets, windows and poultices, were convinced that the cold air on the boy's face, hands and chest not only did him no harm, but gave him comfort and quieted him, there is hope for others. Let the hearer and reader remember that this young boy was sicken with poison. He was overheated, prostrated, doped. The fresh air streamed into his face, moved the hair on his forehead, it passed in at one window over his head and out another window. It was the best March air to be had in New York.

Hot, dry skin, dry tongue, muttering delirium; limited lung capacity, call loudly for two aids—

water and air. The heart, blood and kidneys need them. A person looking on that boy, even though a parent and lay member, could be easily convinced that a hot constricting poultice and vitiated air were not indicated. These would possibly have killed him.

The present case is not placed before this audience because all here present do not give air and water to some toxic patients, but because there are some who still do not give it to pneumonia patients.

Drink and draught were once denied the fever-stricken. Now one prescribes both. Once it was a conscientious duty to withstand the piteous appeals for water, likewise to blanket the windows. The parched tongue might swell and cleave, hot hands reach out in vain; water and air must not be given. A young soldier from the Berkshire Hills made a southern fever hospital ring with his delirious cries for a long drink from his father's well. Who but such as he can understand the meaning of the cool touch of fresh currents of air?

Finally: Some one present may wish to say what one person has said to me concerning another case: "It's fortunate that child got well, or you'd have been mobbed." Not so. The parents, under the influence of much explanation and the observation of the case, were convinced that the treatment fitted the indications.

The time has come for thinking. The time has come to give fresh, cool, flowing air and fresh cool draughts of water to the stricken, fevered child. 'Tis time to cool and dilute his blood stream, aid it to unload its toxic material, to drain it from the system. 'Tis time to lightly lend a hand to steady the nervous regulator, to cool and bathe, soothe and refresh. Who now would shut typhus in a close ward? Refuse a drink to burning scarlet fever? Who would, now that they have thought of it rationally, refuse fresh air to a pneumonia patient sodden with toxemia? They cannot catch cold while the fever is on. They are more comfortable, bear their disease better, emerge from the campaign less damaged, recover earlier and more perfectly. There are no dangers, there are all advantages.

New Instrument.

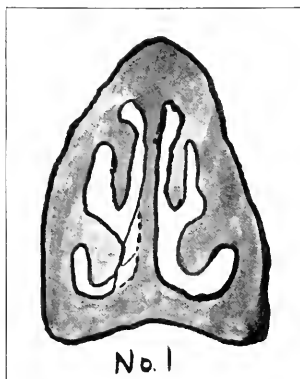
A NEW GOUGE FOR SUBCUTANEOUS OPERATIONS IN THE NOSE.

BY HOWARD A. COHEN, M. D., F. R. C. S.,
Assistant Lecturer in the History of Medicine, University of London, and Lecturer in the History of Medicine, University of London.

At the present time while there is much interest manifested by the medical profession in subcutaneous operations in the nose, the author wishes to describe here a subcutaneous gouge which has been found useful in removing cartilage and bony thickenings of the septum.

The accompanying cut gives a general outline of the description of instrument (See Fig. 2).

Length of the entire instrument is five inches; guard (a), three eighths of an inch; length of sharpened edge (b), five sixteenths of an inch; breadth, five sixteenths of an inch. The guard overlaps the cutting edge by a little more than one sixteenth of an inch. The guard of the gouge is blunt and its edge well rounded, thus making it impossible to injure the mucous membrane. The instrument was originally designed to reduce flat anterior cartilaginous thickenings for which the drill or cautery was used. The writer has found it useful in removing bony thickenings of the vomer.



By doing as little injury as possible to the mucous membrane we avoid the very annoying crusting which follows the use of the cautery, saw or burr.

In doing any of the various "window operations" one is often confronted with a marked thickening at the most prominent part of the convexity, and in these cases the operation is much facilitated by first using the gouge. It not infrequently happens that sufficient air space can be obtained by this alone. The only blood vessels of any consequence cut in this method of removing thickenings are those severed during the first incision, consequently there is very little hemorrhage.

Description of the operation in detail: Local anesthesia of the operative field is first produced by rubbing in thoroughly a 10% solution of cocaine with a cotton swab and in the same way we rub in a 1-3000 adrenalin solution.

Next, the nose is thoroughly irrigated with "alphozone" solution, 1-2000, or corrosive sublimate solution, 1-10000. A straight or slightly curved perpendicular incision is made through the mucous membrane and perichondrium as low on the projecting cartilage as the operator wishes to remove the section. The periosteum elevator is then inserted under the perichondrium and gradually worked backward to about one fourth of an inch beyond the thickening and somewhat above and below the piece of cartilage the operator wishes to remove.

The guard is now inserted under the mucous membrane and perichondrium and the sharp edge of the gouge is engaged in the part to be removed. If the portion to be removed consists of cartilage alone the gouge is very easily pushed through, but where there is bone it sometimes requires a slight blow of the mallet to sever it completely.

Care should be taken that enough bone and cartilage be removed and that no projecting bits are left to hold the mucous membrane away from the septum. After the section is removed the cavity is irrigated with a disinfecting solution and the two edges are connected and a stitch taken if necessary, but the writer has never found it called for. A piece of antiseptic cotton is pushed well into the nose and then drawn forward, this brings the two edges together and at the same time brings the perichondrium in contact with the septum.

In a number of cases there has been good union in about twenty-four hours. After the cotton is removed the patient is given an antiseptic spray to use at home four times a day. When the incision can be easily reached with the finger the patient is given mild citrine ointment to apply night and morning. The operation can be done in from three to eight minutes. In cut No. 1 the dark line shows the thickenings before the cartilage was reduced with the gouge, while the dotted line shows the line of the septum after its removal. If it is necessary at any time to remove the mucous membrane with the cartilage it can be done more expeditiously and with less shock to the patient with the gouge than with the saw.

The writer has found the instrument very satisfactory in removing turbinates where the bone is enlarged, and it is also much safer for the general practitioner who has seldom an occasion to use such an instrument.



FIG. 2.

While the dimensions of the largest size gouge only are here given it is well to have at least two smaller.

The advantages claimed for this instrument are:

- (1) The rapidity with which one can remove thickenings under the mucous membrane.
- (2) Safety.
- (3) Rapid healing with little or no crusting.
- (4) Ease with which one can remove broad, flat thickenings which could not be engaged with the saw.

The above instrument was made for the writer by Codman & Shurtleff of Boston.

Reports of Societies.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

STATED MEETING, WEDNESDAY, JAN. 10, 1906.

The president, DR. JAMES M. ANDERS, in the chair.

CHRONIC ACETANILID POISONING, WITH REPORT OF A CASE DUE TO ABSORPTION OF THE DRUG FROM AN ULCER OF THE LEG.

DR. JAMES R. HERRICK of Chicago read a paper reporting this case. A woman of fifty for seven years applied daily to a large varicose ulcer of the leg about an ounce of a powder the nature of which was unknown to her. There had been weakness, dyspnea, palpitation, mental depression and general "nervousness." Cardiac and pulmonary findings did not explain cyanosis which was present. The powder was found to be pure acetanilid. Stopping its application there is complaint of pain and extreme restlessness with almost maniacal excitement. The reapplication of the powder or the use of acetanilid from the drug room internally quieted the nervous systems. By gradual lessening of the amount of the drug applied it was finally given up. This was followed by improvement in the general condition. The study of the case for several weeks showed that the effect of the chronic intoxication on the general nutrition was marked. Anorexia, irregular action of the bowels, weakness, with considerable emaciation disappeared promptly when the drug was stopped. The blood did not show methemoglobinemia as reported in some other cases. The anemia was moderately severe. Leukocytosis was moderate. Morphological degenerative changes in the red corpuscles were not pronounced. One month after the use of the acetanilid was then stopped the blood count showed 5,580,000 red corpuscles and 100% of hemoglobin. The urine averaged 1,800 cc. with a specific gravity of 1.015. It was port wine color and on standing became brownish black. Fehling's solution revealed no copper reducing substances. The enlargement of the spleen was striking, as was its distinct diminution in size when the intoxication was at an end. Feeding acetanilid to animals failed to produce splenic enlargement, except in one dog, where a slight enlargement with connective tissue increase was found. The addition to the use of the drug was as pronounced as in the case of the morphine or cocaine habit *à*, though more amenable to treatment, which was here entirely successful by the method of gradual withdrawal.

Dr. Herrick thought the acetanilid habit probably more common than generally supposed. The case with which the drug may be obtained by the laity either in its pure condition as the main ingredient of patent and proprietary medicines sold for the relief of headache tended to this frequency. The recognition of the condition depended on the detection of the use of the drug. Otherwise unaccountable cyanosis should arouse suspicion. Alimentary disturbances and neurotic symptoms may be due to the poisoning. The enlargement of the spleen has been reported in several cases. Secondary anemia may be extreme. Strangely enough, in some cases polycythemia rather than anemia has been reported. One such case in a chronic intoxication from the prolonged use of orange has been under Dr. Herrick's care. The shrewd and to diagnosis was said to be the examination of the urine which reveals the dark color, paramidophenol and increase in the conjugate sulphates.

It was pointed out that the condition must be differentiated from diseases that might produce cyanosis, such as cardiac and pulmonary disease, as well as from

the anemias and leukemias. Careful study of the blood, it was said, would clear up these differential points. Cyanosis with polycythemia and splenic enlargement may be simulated by acetanilid intoxication, as may cyanosis that is enterogenic. The study of the urine is here all important as an aid to diagnosis.

The author said that promising fields for investigation were opened up by the recent interest in cases of cyanosis, polycythemia and splenomegaly. He suggested that perhaps a study of chronic acetanilid poisoning might throw some light upon these cases.

DR. ALFRED STENGEL spoke of the necessity of distinguishing between acute acetanilid poisoning, which is exceedingly common, and chronic acetanilid poisoning, which is rare. His experience is limited to five cases, three of which he had examined, two others he had seen but was not permitted to report. The first case was one similar to that reported by Dr. Herrick. There were the marked changes in the blood such as he had not seen in any other case, the very marked change in the character of the red corpuscles with the very decided tendency to nucleated red corpuscles. The case was that of a young girl brought to the University Hospital to be under the care of Dr. Matthew H. Cryer for tritaneal neuralgia. Upon her arrival from Connecticut she was in such a desperate condition that surgical treatment was not warranted and she was put under medical inspection. She was extremely cyanotic. By direction of Dr. Stengel she was bled to the extent of six or eight ounces. Dr. C. Y. White was convinced of the presence of acetanilid poisoning and soon convinced Dr. Stengel of the truth of his theory. After investigation it was found that the girl was surreptitiously receiving acetanilid capsules and the patient afterward confessed. The case was one of those diagnosed as congenital heart disease. The diagnosis had been made by a distinguished clinician who, it was suggested, was a good deal occupied and had made a more or less casual examination. Among several other diagnoses which had been made of the girl's condition was that of mediastinal tumor. That such mistaken diagnoses should have been made was not a surprise owing to the most remarkable changes through which the heart passed. It increased tremendously in size. She had had several attacks of acute dilatation with the appearance and subsequent disappearance of a loud systolic murmur with corresponding increase and subsidence in the intercostal cyanosis. With the intercostal cyanosis the extremities were warm. This was one of the first features suggesting the true nature of the case. Dr. Stengel expressed his belief that such changes in the heart could not be produced without serious damage to the musculature. To have a heart suddenly dilate and spread an inch or an inch and a half, beyond period of ventricle of a doubt, and then pull itself together again, the cessation of the drug, and the cyanosis disappear, he felt could not but leave some impression upon the heart. Interesting features were presented at the two other cases he had examined. In one, that of a very intelligent man, there were symptoms of cyanosis of the fingers and lips, with a sort of steel blue color of the skin. The man had been taking Phenagan, and showed what Dr. Herrick had called a "phenaginic perversion." When under the influence of the drug he ceased taking it, when at under its influence he was willing to confess his use of it. The other case was that of a woman who secured the drug without the physician's knowledge. Dr. Stengel's diagnosis was proven to be correct. While under the influence of the drug it was possible to induce cyanosis which disappeared when the drug was stopped.

In the first case of the series cyanosis, intercostal cyanosis, greatly enlarged heart, steel blue color of the skin,

enlargement but marked polycythemia. This had suggested the possibility of some of the cases reported of chronic cyanosis being those of acetanilid poisoning, which would explain the polycythemia. In the two latter cases there was no change in the character of the red corpuscles.

Aside from these intense cases, Dr. Stengel believes with Dr. Herrick in the existence of a large number of cases of acetanilid poisoning of minor grade. In his own practice he has seen cases of disturbance of heart action and of general health which he believed due to frequent ingestion of the drug in sufficient amounts to interfere with health. Because these are the cases most numerous he believed them of the most importance to the profession. Here again he believed with Dr. Herrick that if physicians were on the alert the cases would not be difficult to recognize. He admitted the possibility of their being mistaken for a number of conditions as detailed by Dr. Herrick.

DR. S. SOLIS COHEN continued the thought expressed by Dr. Stengel that the physician should be constantly on the watch for the minor grades of acetanilid poisoning. In cases presenting ill-assorted and vague symptoms, explanations other than the true one might be given, unless some knowledge of the history or unguarded remark of the patient directed attention into the right channel. He recalled the case of a very intelligent man who had been under his care for a number of years, who had originally had attacks of migraine which he had himself treated by tablets bought at any drug store. These headaches and attacks of vomiting had been completely relieved by the use of glasses prescribed by Dr. George M. Gould. This case was an instance of true migraine relieved by proper refraction, the existence of which was looked upon with doubt by a good many neurologists. Some time after passing from under Dr. Cohen's observation and while spending the summer in the mountains he was suddenly attacked with fainting, and he was informed by the examining physician that he had acute Bright's disease. He returned promptly to Philadelphia. Dr. Cohen's examination of the urine discovered the urine to be free from albumin, casts and sugar. It was learned that the man had been taking, when he felt tired, some bromo-seltzer. A further study of the case convinced Dr. Cohen that it was one of chronic acetanilid poisoning. In another case recalled by Dr. Cohen in which the patient had had chronic heart disease for some time, the cyanosis was out of proportion to the cardiac lesion and investigation showed the bromo-seltzer habit. He is convinced that bromo-seltzer is, perhaps, the most common and most dangerous cause of chronic acetanilid poisoning among intelligent people.

One of the great dangers of chronic poisoning with coal tar products was pointed out to be the sudden yielding of the heart to some unusual strain. Dr. Cohen further recalled the case of a young woman who had persisted in the taking of some coal tar product which had been originally prescribed for migraine. About a year after her marriage she died suddenly following an apparently normal labor. The knowledge of the continued use of the prescription during pregnancy gave the clue to the cause of death. The cases were cited as illustrations of the widespread habit of taking coal tar products and of the hold which the habit takes upon people although warned against it. He pointed out the importance of recognizing the early changes resulting, and the importance also of not mistaking for serious organic disease of heart or kidneys, the profound cyanosis sometimes developed.

DR. HENRY LEFFMANN called attention to the probability that under the condition of the new Pharma-

cepeia there would be an increase in the cases of chronic acetanilid poisoning. This was because the Pharmacepeia had put upon its list the compound powder of acetanilid which was expected to take the place of the commercial compounds. He thought the motive had been to meet the existing situation, in itself undesirable. In his opinion it was bad judgment to so place it, since every pharmacist would feel at liberty to sell it for headaches. A few of the high-class pharmacists would sell phenacetin, but with the cheaper price of acetanilid the tendency would be to sell the latter. He recalled the statement of an English physician that many so-called rare diseases were possibly only exaggerated forms of common conditions, and that if physicians would learn to look for the marked symptoms they would find the disease to be far less common than supposed to be. He believed that the practice of taking these drugs was so excessive and so encouraged by prescribing druggists that many troubles were mistaken by physicians for conditions of real disease, whereas, they were really conditions of acetanilid or other coal tar products poisoning.

DR. H. C. WOOD, JR., thought that Dr. Herrick had made out a very good case of the non-existence of chronic acetanilid poisoning. It had seemed to him that Dr. Herrick's case, also that of Dr. Stengel, were those rather of a series of successive acute poisonings than of one chronic poisoning. There were not shown any of the characteristic symptoms following chronic poisoning; for example, as in sulfonal, the persistence of the symptoms after the withdrawal of the drug, and no permanent injury wrought by the prolonged use of the drug. Moreover, it was voted that Dr. Herrick in his experiments had been unable to produce any serious pathological lesion in animals by the prolonged use of the drug. The symptoms had occurred immediately following the administration of very large doses of the drug, and persisted, because the drug was persisted in until the animal died. It seemed to him, therefore, much more logical to regard the cases as repeated attacks of acute poisoning following the repeated ingestion of the poison.

This, of course, had no bearing upon the existence of the drug habit. He thought there was a distinction to be made between the existence of the drug habit and the existence of poisoning produced by that habit. A point of interest to him was the suggestion that the cyanosis had occurred as the result of the ingestion of acetanilid. He thought it was commonly held that cyanosis is due to the presence of methemoglobin in the blood. Dr. Herrick and others, however, had failed to find any methemoglobin in the blood. If this were present in small quantities its existence might be difficult to prove. On the other hand, if present in only small quantity, it could not account for the marked degree of cyanosis in these cases. He, therefore, thought that the large degree of cyanosis must be ascribed to the acute dilatation of the heart and failure of circulation characteristic of poisoning by the drug. It had been shown by Sanger that blood which has undergone chemical change with production of methemoglobin is not destroyed; that is, it is possible to restore hemoglobin to a corpuscle which has had its change of methemoglobin. The experiments of a German investigator have shown that in those cases in which the blood has undergone chemical change, a larger proportion of oxygen will be taken up, if the atmosphere is one of pure oxygen. He experimented with mice and found that in an atmosphere of pure oxygen they would withstand a dosage two or three times as large as a fatal dose. He also found that if he increased the pressure of the oxygen they would withstand a still larger dosage of the poison.

Dr. W. M. L. COPLIN had not seen a case of chronic acetanilid poisoning and had had little experience with the acute forms. He referred to researches made under his direction upon the influence of the coal tar products upon the protoplasm of the red blood cells. The work was especially in connection with the aniline dyes, antifebrine and antipyrine. Such marked changes in the red blood cells were found that on the cover glass the blood lacked the color of ordinary blood. A point of diagnostic value mentioned was the appearance of the exudates when present. Nothing was found characteristic of actual nephritis. In concurrent work done with carbolic acid renal changes were quite marked. From Dr. Coplin's work upon the spleen of animals he regards with some skepticism reported instances of cirrhosis of the liver. One experimenter, in a large number of dogs, had observed a single case of cirrhosis of the liver. Concerning the microchemical reaction of the blood the research work did not prove satisfactorily that there was any morphological change in the blood which was at all characteristic. The striking feature was that there was no change in the stringibility of the blood explaining this peculiar hue of the freshly dried blood.

Dr. JAMES C. WILSON said that if the distinction suggested by Dr. Wood between repeated acute attacks and chronic acetanilid poisoning were to be observed, cases of the latter were indeed very limited. He cited his observation of a case showing the occurrence of a persistent symptom in a patient by whom large doses of acetanilid were taken every day. The patient, a man of about twenty-six under treatment for a couple of years for syphilis, had taken enormous doses of the iodides. He had suffered much from headache and there was noted progressive tendency to cyanosis which his attending physician tried to explain by some idiosyncrasy to the iodides. Coming under Dr. Wilson's care in the hospital the character of the cyanosis and the cardiac symptoms with splenic enlargement led to the diagnosis of acetanilid poisoning. Investigation showed that the patient had had, prior to the chancre, migraine, and had formed the habit of taking different kinds of headache powders obtained from the apothecary. During the treatment for syphilis he had taken "Orangeine" powders, never less than six or eight, sometimes as many as 18 or 20. Attempts to withdraw the drug were followed by outbreaks of intense headache. With the substitution of small doses of morphia without the knowledge of the patient all the symptoms disappeared and he left the hospital without having taken either acetanilid or morphia for two or three weeks and without the knowledge that he had had morphia. The point made by Dr. Wilson was that brought out by Dr. Herrick that in some of these cases the original cause of distress may disappear and be replaced by a similar continuous suffering arising from the use of the drug itself. In Dr. Wilson's case the ultimate withdrawal of the acetanilid was followed by complete cessation of the headache for which the patient had habituated himself to the drug.

Dr. DAVID L. LORRAIE said that he had had little experience with chronic acetanilid poisoning. He inquired of Dr. Herrick how much evidence was shown by the literature of the persistence of mental symptoms after chronic acetanilid poisoning of long duration. He had seen one case, whether coincident or otherwise, in which the man had developed chronic mental symptoms and had been placed in an asylum for the insane.

In regard to the relation of the methemoglobin to the symptoms, in one case in which there was profound cyanosis, examination of the blood and urine revealed nothing but oxyhemoglobin in the blood and in the urine and no methemoglobin. He said it was certain

that the presence of methemoglobin was not a satisfactory explanation of the cyanosis. Reference was made to one authority on the chemical analysis of the urine who had cast much doubt upon the existence of methemoglobinuria and considered the vast majority of the reported cases due to erroneous observation. Dr. Edsall thought the same might be true of the blood.

Dr. W. E. ROBERTSON said that his experience had been limited to two cases, — one an acute case in which the infection occurred from an acetanilid dressing and in which the symptoms subsided upon the withdrawal of the dressing; the other, a chronic case, and in this the blood picture was similar to that presented in the discussion. In the chronic case, notwithstanding the great cyanosis, there was no dyspnea. It resembled very much a marked case of polycythemia in which the cyanosis is of intense degree.

In connection with Dr. Wood's reference to the cases being regarded as instances of repeated attacks of acute poisoning rather than of chronic poisoning, he cited one observer who had noted upon the complete withdrawal of the drug the persistence of the symptoms and also of mental symptoms.

Dr. GUY HINSDALE said that in the early days of the use of acetanilid when it was known by the name of antifebrine he thought the drug was used much more freely and injudiciously than at present. He recalled the case of a young man with epilepsy in whose treatment the remedy was used for two years, and this patient upon leaving the city for a year had obtained a considerable amount to be used continuously. Upon his return while there was some cyanosis no other bad effects were apparent. The effect upon the epilepsy was not curative, but probably mitigating. At the present Dr. Hinsdale would hesitate to use the drug in the quantities in which it was formerly employed.

Dr. HERRICK, in closing, was inclined to regard the criticism of Dr. Wood of the term "chronic" acetanilid poisoning as a just one. He thinks that probably the action in these cases should be looked upon as cumulative; and yet, he does not believe that it has been definitely decided how permanent the damage done is. It cannot be stated certainly that the heart muscle was not more or less permanently damaged, nor that the blood making organs would be restored to their normal function. Neither was there certainty concerning permanent mental effects. He replied to Dr. Edsall that he could not answer his question regarding permanent mental derangement following chronic acetanilid intoxication. Most of the cases had recovered quite promptly upon the withdrawal of the drug. From the records of some of the cases he had observed that the finding of methemoglobin was somewhat doubtful, and felt that the examination for its presence should be very carefully conducted before it was declared to exist.

Dr. HERRICK inquired whether any of the members present had ever seen a case of chronic nitroing poisoning. He had within the last few weeks seen a patient with a history almost identically that of the cases under discussion. The cyanosis was most intense and could not be accounted for by any discernible cardiac or pulmonary lesion. The patient, a German woman of advanced years, had been taking half a tablet daily for fifteen years for some bowel trouble. Also at a week before she was seen by Dr. Herrick she had stopped the nitroing. Nothing abnormal was found in the urine and the cyanosis, though extremely, was somewhat better. While acute nitroing poisoning has been definitely recognized Dr. Herrick stated that anything like chronic nitroing poisoning where the patient for fifteen years chews and swallows the same daily was new to him.

He expressed his thanks for the invitation to address the Society and for the very kindly manner in which he felt that his paper had been received.

Recent Literature.

Manual of Psychiatry. By J. ROGUES DE FURSAC, M.D., formerly Chief of Clinic at the Medical Faculty of Paris. Authorized translation from the French by A. J. ROSANOFF, M.D., Junior Assistant Physician, Long Island State Hospital, Kings Park, N. Y. pp. 344. Edited by JOSEPH COLLINS, M.D., Professor of Diseases of the Mind and Nervous System in the New York Post-Graduate Medical School, etc. First edition. New York: John Wiley & Sons. 1905.

Psychiatry has become such a comprehensive science that the manuals of insanity are more inadequate for purposes of instruction than formerly and less in vogue by reason of their necessary omission, for want of space, of subjects or features that are essential to a sufficient knowledge of the subject. We are, therefore, pleasantly surprised to find this small volume as acceptable as it is. The symptomatology of insanity, its various forms, its jurisprudence and even its treatment are set forth, superficially, to be sure, but so concisely, clearly and accurately as to give the pupil in psychiatry a very good idea of what he wishes to know. For this reason the manual will, without doubt, prove to be of practical value as an elementary work which shall serve as a guide to a more detailed and comprehensive study of the new psychiatry. Not a little of its value is due to faithful translation and judicious editing.

Movable Kidney. A Cause of Insanity, Headache, Neurasthenia, Insomnia, Mental Failure and other Disorders of the Nervous System. A Cause also of Dilatation of the Stomach. By C. W. SUCKLING, M.D. (Lond.), M.R.C.P., Consulting Physician to the Queen's, to the Children's, and to the Orthopedic and Spinal Hospitals, etc., etc. London: H. K. Lewis. 1905.

This publication consists of one hundred and twenty-eight pages. As a bit of book making it is marred by the rather poor quality of its illustrations and the insertion of facsimile letters of patients, and some photographs of a few of them as they appeared before and after operation.

While there are some good views taken of the subject in the course of the work, it is, on the whole, characterized by entire lack of system, by a rather extreme view of the evils resulting from the condition of movable kidney, a very superficial presentation of the literature, and an egotism which taken all together make it a book of as unsatisfactory a character as any that have come into our hands for comment.

As examples of the total lack of coherency in the arrangement of the subjects and parts of subjects, the following may be cited:

"Causes of Movable Kidney" appear in two

widely-separated parts of the book, first under the general heading, "Some Literature on Movable Kidney," and again under the general heading, "Symptoms of Movable Kidney," with neither of which parts of the subject do they appear to have any very definite connection. Again we may cite as a singular selection of sequence of subheadings (both with relation to the general heading "Symptoms," under which they stand and to each other), the following: "Albuminuria," "Dyspepsia," "Irritability of the Bladder," "Appendicitis," "Causation of Movable Kidney," "Treatment by Belts," "Appendicitis" and "Treatment by Belts" as symptoms of movable kidney strike us as having a certain flavor of novelty.

If what the writer presents from it represents his view of the literature of the subject, we must confess that his literary horizon has a rather narrow limit. There is scarcely any mention made of French and but the most scanty notice given to German writers; but very few of the really notable writings are referred to. He lays much stress upon the works of American gynecologists, and practically none upon that of the surgeons of that country, or of others except a few in England. Morris is the most notable exception to this general dearth of the strong writers. One fifth of the whole volume consists of quotation from the writings of Dr. Goelet of New York.

The author attributes a considerable number of cases of insanity, some of epilepsy, headaches, lumbago, insomnia, etc., etc., to the existence of nephroptosis, and adduces examples of patients who having had such conditions were cured after the operation of nephropexy.

One of the grounds upon which he rests his belief with regard to the causal relation of movable kidney to insanity is his finding movable kidney in 50% of fifty female inmates in a certain asylum which he visited in Warwickshire. In view of the statement which we so often hear from a certain number of medical men who have charge of hospital out-patient clinics for women, to the effect that they find any where from 40% to 80% of the patients have well marked movable kidneys, and that the larger part of them have no symptoms which are in any way to be referred to that condition, and certainly are in no respect insane in any instance. The similar finding among a similar per cent of insane women lacks any very startling suggestion of proof of causal connection between this renal condition and the production of insanity.

It is to be regretted that the operative treatment of nephroptosis in cases which are appropriate for its application, which are, we believe, a larger number than some medical men are willing to concede, should be advocated by such an extremist as the author of this volume appears to be in some respects, for such advocacy is likely to confirm the prejudice against that form of treatment and thus, perhaps, deprive some of those for whom it would be highly beneficial from being thereby relieved of their sufferings.

Nervous and Mental Diseases. By ARCHIBALD CHURCH, M.D., and FREDERICK PETERSON, M.D. Fifth edition, thoroughly revised. 8vo, pp 937, with 341 illustrations. Philadelphia and London: W. B. Saunders & Co., 1905.

The appearance of a fifth edition within six years is sufficient proof of the popularity of this treatise. Dr. Church has added many brief interpolations to his share of the work in order to bring it more fully up to date. Dr. Peterson has added Kraepelin's classification to the others cited in his opening chapter, and has written two new chapters on dementia precox and manic depressive insanity, embodying Kraepelin's teachings, which hardly harmonize with the other chapters of the work. We regret that a writer of Dr. Peterson's literary taste should adopt the current barbarism, adopted by so many alienists, of "manic-depressive," a term which is neither English nor German, but a slovenly effort to translate the German "manisch" by some one ignorant of both languages.

Genito-Urinary and Venereal Diseases. By J. WILLIAM WHITE, M.D., John Rhea Barton Professor of Surgery, University of Pennsylvania, and EDWARD MARTIN, M.D., Professor of Clinical Surgery, University of Pennsylvania. Sixth edition. Philadelphia and London: J. B. Lippincott Company, 1905.

The former editions of this excellent work were favorably reviewed in this journal at the time of their publication, and we are glad to extend an equally cordial welcome to the present one.

In the sixth edition, the authors have brought the different subjects of which it treats to the level which is demanded by the advances in the knowledge of them that have taken place in even the short time of two years which has elapsed since the preceding edition appeared.

We are glad to note that the part of the volume which is devoted to the consideration of syphilis no longer occupies the illogical position in the midst of the chapters dealing with surgical diseases of the genito-urinary organs, in which it was placed in the first edition, and that it has been put at the end of it instead.

We do not agree with the view expressed by the publishers with regard to the arrangement of the index of the volume, for which they claim especial excellence, for it seems to us to be one of the most difficult in which to trace a given subject that we have ever seen. Apart from this particular feature, the work as a bit of book making, is admirable, and is very well illustrated. Among its best features are the chapters which deal with the subjects of general symptomatology and examination of the urine.

In a work that is so evenly and generally good, it is needless to specify the value attaching to its special parts. It is a refreshing contrast to many of the numerous publications purporting to deal with the subjects included in this branch of surgery, so many of which are of a cheap order, and we once more bid it welcome and commend it to the profession.

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PREVENTIVE MEDICINE AT DARTMOUTH COLLEGE.

THE old adage that an ounce of prevention is worth a pound of cure has always been accepted in a casual way but has rarely been lived up to, even in medicine. In fact the tendency has been to neglect the prevention, however vigorously the cure was used afterwards. The fact that the adage is true, however, has been growing upon the medical profession until at the present day, many measures are in use to prevent disease which a few years ago would have been considered so radical that no one would have had the courage to advocate them. Still, in spite of the great progress along the lines of preventive medicine, there is much that is left undone. While a road here and there may be blocked many others are left open. It is seldom that the work is carried through to a logical conclusion by blocking all the roads. This involves so much which seems useless to the average citizen that in the average community the willing co-operation which is necessary for complete success is not yet attainable. This is especially true of the large cities where the officials appear to the masses as men set over them by some foreign power. In the smaller communities, however, where life is more intimate, this antagonism may be wanting. It is here, therefore, that hygienic reform should be carried out most easily after education has done its work, and nowhere should the cognitions be more favorable than in our colleges where the government is more nearly paternal than in the city, and where people and property are under one control. In fact, there are left few of the colleges today which do not have medical officers to look after

the health of their students. But even their work is along the lines of cure rather than of prevention. Contagious cases are isolated and rooms disinfected, but as a rule little more is done.

In this respect the work at Dartmouth College is unique. How thorough this can be seen in a recent article in the Dartmouth *Bi-Monthly* by Dr. H. N. Kingsford, the medical director. Dr. Kingsford has personal charge of the work and tells of the system adopted there to care for the student health. Nothing is taken for granted where a personal examination is possible. We read, therefore, that a bacteriological examination of the water is made every month and a chemical examination every four months; that the watershed has been cleared of dwellings; that the sources of the milk supply are systematically investigated; changes suggested where necessary and subsequent visits made to see that these suggestions have been carried out. The halls and corridors of the college buildings are not only cleaned but are disinfected regularly. Cultures of the air of all lecture and recitation rooms, of the basements and of the chapel are taken frequently and if more than a certain number of colonies develop the room is disinfected and search made for the cause. Any sputum found upon the floors or walls of the buildings is examined for tubercle bacilli and if any are found their origin is sought for. In this way two cases of unsuspected phthisis were discovered. Basements are whitewashed and opened to the light and air and the drainage kept in good order. It was simple enough to carry out these measures where only the college property was concerned, but as many of the students lived or ate in private houses a different problem had to be solved there in order to complete the work. Tact and patience, however, cleared away all opposition so that now all of these houses are inspected in the same way as the college property.

This system has been in force only two years and, although this may be too short a time from which to draw conclusions, yet Dr. Kingsford's figures are very suggestive. At Dartmouth attendance at chapel and at lectures is compulsory. Any student who wishes to absent himself must obtain a written permit from the medical director who in this way probably sees nearly all of the cases of sickness. In 1903-4, there were 11 cases of bronchitis; in 1904-5, there were 10; cold in the head, 1903-4, 65; 1904-5, 30; influenza dropped from 59 to 21; rheumatism, 11 to 4; tonsillitis, 20 to 9; measles, 31 in 1903-4 to 4 in 1904-5. Such results would seem to

justify the system, whether considered from the medical point of view or from the financial. The first needs no argument. Of the second, it may be said that it ought to be worth while financially to be able to assure prospective students that every means will be taken to protect them from disease.

As already stated, such thorough work is probably unique in college history. At the very large institutions where the students are scattered over a large territory it may not be possible to carry out the investigations with the same completeness as at Dartmouth, yet much more can be done than is attempted at present. In the college proper all necessary measures can, of course, be taken without difficulty. When, however, the college authorities attempt to extend their work to the private houses it will be necessary for them to secure not only the co-operation of the Board of Health, but also of the householders. The experience at Hanover would seem to show that this will not be so difficult as it appears at first sight. There the Board of Health readily gave its consent to the scheme as did most of the householders. Now and then individuals were encountered who objected to making certain repairs which seemed necessary to the medical director. When, however, they were told that the parents of the students using that house would be notified that the place was unhealthful, they withdrew their objections and made the suggested repairs. It is, therefore, probable that equal rights can be obtained at other institutions; at all events, in the private dormitories and in the larger boarding houses. When once supervision of the smallest details of sanitation becomes the rule in the colleges may we not expect it to serve as an example for larger communities and thus spread the idea of prevention? This should be easier nowadays than formerly, because preventive medicine has played so successful a part in Cuba, in the Japanese war and in New Orleans. It is to be hoped that every college may be stimulated by Dartmouth's example, and that in the end public appreciation of the value of preventive methods may secure the same complete and consistent system of safeguarding the public health.

BILLS BEFORE THE MASSACHUSETTS LEGISLATURE.

EACH year sees a certain number of new bills before the legislature, more or less directly related to medical science or practice, and many old bills with slightly altered faces. Some of these

latter appear with regularity year after year. Among the most conspicuous of these is the usual petition of Elizabeth Stuart Phelps Ward and others looking toward legislation to prohibit vivisection. Section I of this familiar bill this year reads as follows: "No person shall perform on any dog or cat any experiment of a nature causing, or likely to cause, pain to, or disease in, such dog or cat for any purpose whatsoever, either with or without anesthetics." This somewhat radical position is not likely to receive the approbation of the legislature in any greater degree than did its predecessors. The bill for the promotion of anatomical science appears in slightly modified form and is somewhat more inclusive than it has hitherto been. The adjustment which must be made between the legitimate claims of anatomical science and those relating to post-mortem examination must be recognized both by those concerned primarily with the teaching of anatomy and also those interested in the study of disease and its consequences. Any bill which prevents absolutely the examination of patients dying of obscure disease should not receive the approbation of legislators or of the medical profession at large.

An attempt is made in the petition of James M. Curley to provide for the care of tuberculous patients at the city's expense in private hospitals. The plan is to hire not more than one hundred beds, paying not more than five dollars each a week for them to be used by needy tuberculous patients of the city. Such a provision has obvious defects, and we have no doubt will not meet with popular approval. Other bills relate to the question of a site for a convalescent sanatorium for tuberculous patients in the towns of Saugus and Melrose. Two bills are offered relative to the protection of the health of school children, the more elaborate of which is presented by Dr. Richard C. Cabot and others. The object of this latter bill is to safeguard children against contagious and infectious disease, to be brought about by the appointment of school physicians and by a careful reporting on the part of teachers of signs of ill health among the pupils. The spirit of this bill is excellent, and if passed certainly should conduce to an amelioration of present conditions. Various bills are presented looking to the control of preparation containing either powerful drugs, narcotic or cocaine, of the oral alcohol. These are all directed toward greater publicity in the sale of such substances, and as such should meet with general approbation.

Bills which have become familiar through repetition are several relative to the sale and use of fire-crackers, premature burial, expectoration in public places and the granting of degrees by the Massachusetts College of Osteopathy. It is apparently difficult to persuade the public that noise is not an essential feature of the celebration of Independence Day. It is, therefore, probable that the day this year will be much as it has been in the past. It is, however, to be hoped that the elements of particular danger associated with certain types of explosives and toys may be eliminated by law at the earliest possible moment. It is unfortunate to bring again to the front the bugbear of premature burial, which, in some few minds, has apparently become a fixed idea. It is not for a moment to be supposed that the elaborate provisions of this bill will be acceptable to the majority of thinking persons. Expectoration in public places should, by some means, be prevented. We were, however, under the impression that the present law if enforced, would cover the matter sufficiently. The complicated questions of the practice of medicine and the registration of physicians are the subjects of bills as heretofore.

A bill to provide for certain public reports by the State Board of Health is undoubtedly a good measure, but chimerical on account of its expense. An attempt to regulate the practice of professional nursing for the sick is likewise open to question. The multiplication of licensing boards must stop somewhere. Already physicians, dentists, veterinarians, pharmacists and undertakers are licensed, and at this session of the legislature it is proposed to create boards for licensing nurses, barbers, clairvoyants, including palmists, fortune tellers and astrologers, and osteopaths. The bill regarding osteopathy deserves a mention of the degree of doctor, which would probably mean the disappearance of the letters D.O. on signs in favor of Dr. A similar bill, introduced by Senator J. H. Walker to compel the use of quarantined by order of board of health. The bill is carefully drawn and is intended to protect the wage earner of a family and to ensure that children may be dealt with in a most judicious manner. One of the most important bills before the legislature is the petition of Dr. Charles H. Johnson to provide legislation to the control of the sale of certain substances, the preparation of which requires that a certain quantity of the substance be given to the patient in the form of a supply has now and keep the same. The object of the bill is to prevent the sale of a

in shops and homes where they are used for all sorts of purposes and then sent back to the farmer who is obliged to clean them. As an example of what may happen, in one case the board's inspector found a complete miscarriage in an eight-quart can. This bill has passed the Senate and certainly should become a law.

In general, the perusal of the bills of this year shows no very radical departure from the yearly legislation. It is unfortunate that certain bills, almost certainly incapable of passage, should be brought forward, year after year, with a renewal of argument which should once and for all be final. The continual re-adjustment of medicine to the complicated affairs of the community is, however, a matter of the greatest importance, and bills carefully framed should receive the attention of the medical profession at the hearings much more than is often the case.

MEDICAL NOTES.

THE GERMAN RÖNTGEN SOCIETY. — It is announced that the second congress of the German Röntgen Society will be held on the 1st and 2d of April, 1906, instead of on the 8th and 9th, as originally announced. The congress will be held in Berlin.

THE NATURE AND CAUSE OF OLD AGE. — Prof. Charles H. Minot of the Harvard Medical School will deliver the tenth lecture in the Harvey Society course at the New York Academy of Medicine on the evening of Saturday, Feb. 24, the subject being "On the Nature and Cause of Old Age."

ONE HUNDREDTH ANNIVERSARY OF THE MEDICAL DEPARTMENT OF THE UNIVERSITY OF MARYLAND. — The Medical Department of the University of Maryland proposes to celebrate its one hundredth anniversary in May, 1907, and is now taking the necessary steps for the organization of such celebration.

BARON KANEHIRO TAKAKI. — Baron Kanehiro Takaki, M.D., F.R.C.S., F.R.S.P., General-Surgeon (reserve) of the Japanese Navy, was in Boston last week as the guest of Dr. John C. Munro and visited the principal hospitals and objects of interest, expressing much approval of what he saw. He also delivered a short address to the students at the Harvard Medical School.

NATIONAL DRUG LEGISLATION. — Representative Webb, of North Carolina, according to the February issue of the *Druggists' Circular*, has

redrafted his bill, the object of which is to compel the names of the ingredients of proprietary medicines to be printed on the labels of such goods used in interstate commerce, and also the amounts of any of the following which may be present: "Opium or any of the preparations of opium, cocaine or salts of cocaine or preparations of cocaine, or morphine or preparations of morphine or salts of morphine, or chloral, or any of the preparations or chloral, or alcohol, or eucaine, or heroine."

Another interstate bill of interest to druggists is that of Senator Hopkins, which provides that when foods or drugs are shipped into a state in original packages or otherwise, they become subject to the laws of that state to the same extent as if made in the state.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, Feb. 21, 1906, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 68, scarlatina 19, typhoid fever 4, measles 183, tuberculosis 42, smallpox 0.

The death-rate of the reported deaths for the week ending Feb. 21, 1906, was 20.07.

BOSTON MORTALITY STATISTICS. — The total number of deaths reported to the Board of Health for the week ending Saturday, Feb. 17, 1905, was 217, against 223 the corresponding week of last year, showing a decrease of 6 deaths, and making the death-rate for the week 19.02. Of this number 114 were males and 103 were females; 213 were white and 4 colored; 145 were born in the United States, 70 in foreign countries and 2 unknown; 51 were of American parentage, 143 of foreign parentage and 23 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 46 cases and 4 deaths; scarlatina, 31 cases and no deaths; typhoid fever, 8 cases and 2 deaths; measles, 169 cases and 3 deaths; tuberculosis, 32 cases and 26 deaths; smallpox, no cases and no deaths. The deaths from pneumonia were 36, whooping cough 0, heart disease 16, bronchitis 8 and marasmus 2. There were 15 deaths from violent causes. The number of children who died under one year was 39; the number under five years, 61. The number of persons who died over sixty years of age was 44. The deaths in public institutions were 70.

A NEW ANTIVIVISECTION BILL. — A bill to prohibit experiments upon certain domestic animals has been introduced in the Massachusetts

Senate and referred to the Committee on Probate and Chancery as usual. A hearing has been set for Tuesday, Feb. 27. The purpose of the bill is stated in Section 1: "No person shall perform on any dog or cat any experiment of a nature causing, or likely to cause, pain to, or disease in, such dog or cat, for any purpose whatsoever, either with or without anesthetics."

MONTHLY BULLETIN OF THE MASSACHUSETTS STATE BOARD OF HEALTH.—Beginning with January, 1906, the official bulletin of the State Board of Health, which has heretofore for twenty-three years been issued as a weekly publication, appears in the form of a small pamphlet to be published monthly. It is proposed in addition to the usual statistical data to present information on sanitary matters of general public interest. The first number gives a report on inspection of food and drugs during December and one on the inspection of dairies. The milk supply of the city of Gloucester is discussed at some length with publication of the names of various milk producers. The first number also contains other matters of interest. It will be sent regularly to residents of Massachusetts who make a written application to the secretary of the Board.

TO ESTABLISH A REFORMATORY AND PROTECT THE PUBLIC HEALTH.—With the above heading, a bill has been presented to the Massachusetts Senate of which the first section provides that a part of the city shall be fenced off for the inmates of houses of prostitution and all other persons of like character, for reformation. The second section provides for a hospital for their treatment by reputable physicians; the third section for a religious church of all denominations for their reformation; the fourth section requires the open wearing of an insignia indicating that reformation is not complete until one year has elapsed from the time of their commencing to reform to its completion; the fifth section demands that the persons shall pay a suitable sum for rental and maintenance, and that the real estate shall pay double the assessed value to the state monthly.

NEW YORK.

GIFT TO HOSPITALS.—The Eastern District Hospital and four other charitable institutions of Brooklyn have received a gift of \$10,000 each from Mr. Peter Wyckoff of that borough.

REQUEST TO STAMFORD HOSPITAL.—By the will of the late John Weed, a wealthy merchant of New York, the sum of \$50,000 is bequeathed

to the Stamford Hospital for Contagious Diseases at Stamford, Conn., the legacy to be designated as the John Weed Memorial Fund.

LIBRARY FOR THE BLIND.—Richard Randall Ferry, originator and founder of the New York Free Circulating Library for the Blind, died on Feb. 16, at the age of seventy-one years. He was a manufacturer, but in 1891 lost his eyesight and retired from business. The library which he established now circulates 10,000 volumes and also provides music and musical instruction for the blind.

IN AID OF STONY WOLD SANITARIUM.—The Stony Wold Sanitarium, the hospital in the Adirondacks maintained by New York women for women and young girls suffering from incipient tuberculosis, has received an offer of \$10,000 from J. Pierpont Morgan, on condition that the corporation raise the balance of \$33,000 required to cover a three years' deficit and meet bonds to the amount of \$10,000 maturing March 1. At a meeting of the managers of the institution, held Jan. 24, it was reported that about three fourths of the \$20,000 asked for had now been subscribed.

DEATH FROM OVER-DOSE OF VERONAL.—The brother of a school-teacher who died recently from an over-dose of veronal has published a statement to the effect that the drug was not procured without a physician's prescription. The young man, it would appear from his account, went to a physician, telling him that he was suffering from insomnia and suggesting that he should give him a prescription for veronal. The doctor, he declares, had never heard of this new hypnotic, but, notwithstanding this, gave him the desired prescription, asking his patient how to spell the name of the drug.

SALARY FOR AN ANALYTICAL CHEMIST.—Commissioner Darlington has secured an annual appropriation of \$1,800 for the salary of an analytical chemist for food stuffs in the Department of Health. When appearing before the Aldermen's Committee on Salaries and Officers for the purpose of securing favorable action in the matter, he urged the great importance of checking the sale of adulterated foods in the city, which he declared to have reached a truly appalling state. "In fact," he said, "there is scarcely an article of food on sale which cannot be purchased in an adulterated form. Not long ago my department got a sample of 'communion wine' which was found to be made up of wood alcohol, hard cedar and an aniline dye. It was a villainously

poisonous concoction, and we are pushing an investigation to see if the same kind of stuff is being sold generally for church purposes." The Health Department has established a chemical laboratory in East 23d Street for the contemplated work, and Dr. Darlington hopes before long to be able to employ three chemists in carrying this out.

BEQUEST OF A BODY FOR THE PURPOSES OF SCIENCE.—John T. Jackson, a sufferer from locomotor ataxia, who recently committed suicide by taking potassium cyanide, left a letter in which he bequeathed his body to science in the following rather extraordinary language: "What I wish you to do, after the usual formalities are through, is to send my body to Bellevue Hospital, where they treated me like a prince for bronchial pneumonia nearly two years ago. Why I want to be sent to Bellevue Hospital, where I have been three times, is for them to cut me, and, most particularly, saw my legs in two below the knees, to see if there is any marrow in the bones; for I have never been free from pain there for seven years, and I particularly demand that they carry out my desire in the cause of humanity and to try to find out if there is a cure for this awful disease."

ESTABLISHMENT OF CITY BEACHES.—A portion of Mayor McClellan's first message to the new Board of Aldermen was devoted to the establishment of city beaches. In treating of the subject he said: "Provision must soon be made by the city toward securing fresh-air homes for children and convalescent patients from the city hospitals, as well as breathing spaces for the whole people. I know of no more ideal location for such fresh-air resorts than one of the beaches on the Long Island shore. Three of these beaches have been suggested as available for these purposes." After referring to Long Beach and Rockaway Beach, both of which possess the necessary advantages, he goes on to say: "I hardly think the Coney Island Beach (which is more accessible than either of the others) would be available on account of its great cost, but it has been suggested that certain charitable organizations, which now own and occupy part of its shore, might consent, in the event of the city's acquiring a beach further eastward, to exchange their present sites for a similar or better location on the city's property. . . . I trust that this matter, in view of its importance to the general health of the city, may be taken up and seriously considered during the coming year."

MONTHLY MORTALITY IN CITY.—The weekly reports of the Health Department show that the mortality in the city during the month of January represented an annual death-rate of 18.72, as against 17.33 in December and 19.44 in January, 1905. Among the diseases in which there was a diminished mortality were the following: The weekly average of deaths from typhoid fever decreased from 11.5 in December to 6.75 in January; the weekly average from diarrheal diseases, from 36.75 to 35; and from cancer, from 58.5 to 56.5. Among the diseases which showed an augmented mortality were the following: The weekly average of deaths from measles increased from 9 to 20.5; from scarlet fever, from 5.5 to 11.5; from diphtheria and croup, from 36.75 to 49.75; from influenza, from 4.5 to 8.75; from epidemic cerebrospinal meningitis, from 15.75 to 17; from acute bronchitis, from 31 to 50; from pneumonia, from 151.5 to 175.5; from bronchopneumonia, from 85.25 to 121.75; from organic heart diseases, from 105.25 to 114.75; and from Bright's disease and nephritis, from 117.5 to 125.5. It is to be noted that the number of deaths from both cerebrospinal meningitis and pneumonia was considerably less than in January of last year, when the weekly average from the one was 27 and from the other 180.25.

--- Miscellany. ---

THE FIFTEENTH INTERNATIONAL MEDICAL CONGRESS.

THE Fifteenth International Medical Congress at Lisbon, April 19–26, bids fair to be one of unusual importance, and, although the number of congressists will be smaller than when it has been held in some of the larger capitals, it will be more select, and papers will be presented by some of the leading lights of the profession in Europe.

The meetings of the congress will be held at the Medical School of Lisbon, which is a very large and spacious building, and will be under the patronage of the King and Queen of Portugal.

The meetings of the sections will take place in the various halls of the building, besides which there will be others devoted to the comfort of the congressists. The largest hall of the building will be a general loafing or club room, in which the congressists can read, write and converse, while two adjoining rooms of large size will be reserved for the ladies of the party. On the terrace of the University there will be a buffet where the physicians can walk about or sit down and have refreshments served at all hours of the day. Everything will be under one roof, and everyone will know where to find everything

connected with the Congress, as well as everything that is needed in a general way. There will be the office of the President, Secretary and Treasurer of the Congress; telephone room; typewriting room; press room; information room, where one can find out all particulars regarding the various routes of travel; halls for showing different apparatus; amphitheaters for giving lantern exhibitions; a postoffice and telegraph office; registration room; money exchange and a room where papers, cigars, cigarettes, etc., will be on sale.

The opening exercises will take place on the first day of the Congress in the hall of the Geographical Society in the Geographical Society building, where a colonial exposition will take place during the meeting of the Congress, under the auspices of the sections on colonial and naval medicine.

There will be a number of addresses or orations delivered each afternoon at the general meeting by distinguished representatives of different countries. Sir Patrick Manson will represent England; Prof. E. von Bergman, Germany; Professor Reclus, Paris; Professor Newman, Austria; Prof. Prince Jean Tarschanoff, Russia; Prof. Azevedo Sedre, Brazil; Dr. Jose Maria Esquerdo, Spain; Dr. P. Aaser, Norway. The names of those from the other countries have not as yet been given out. Dr. Nicolas Senn, of Chicago, has been invited to deliver the oration for the United States.

The amusements for the congressists will be a Portuguese bull fight, three large general fêtes, and receptions and dinners *à la gala*.

There will be two large steamers, one from London and the other from Hamburg, that will take the congressists to Lisbon, and will serve as hotels during the stay there. One of the steamers can accommodate three hundred passengers.

The hotel and other accommodations for the congressists are in the hands of Mr. Manuel Josida Silva, Redaction du Annuaire Commercial de Portugal, Praça dos Restauradores, Palacia Fez, Lisbon to whom all communications concerning board and lodging in Lisbon should be addressed.

All communications regarding the scientific part of the Congress should be addressed to Dr. Ramon Ginteras, Secretary of the American National Committee. All questions regarding transportation to Lisbon and return should be addressed to Dr. Charles Wood Cassett, Editor of the *Medical Herald*, St. Joseph Mo.

A REVIEW OF YELLOW FEVER EPIDEMICS IN MARYLAND

In an address before the general Alumni Association of the University of Maryland delivered Jan. 25 last and published in *Old Maryland*, Dr. James Carroll reviewed the epidemics of yellow fever which have occurred at Baltimore since 1793. It is evident that some

of the profession of that day were keen observers, and our present views in regard to the mode of spread of the disease makes the perplexities which our predecessors experienced in interpreting their observations all the more interesting. Some of them evidently came pretty near the truth of the situation. At the opening of Dr. Carroll's address, we find the following statement:

"Dr. Nathaniel Potter, a former pupil of Dr. Benjamin Rush, and afterward the first professor of Theory and Practice of Medicine in the University, held, in 1793, that yellow fever was not contagious, and he communicated this opinion to Dr. Rush in writing. According to his own statement, he believed that he was the only person in America who held that opinion, and in 1795 he prepared to defend his belief in an inaugural thesis, to be read at the next commencement of the University of Pennsylvania, of which he was a student. He was dissuaded by Dr. Wistar, on the grounds of propriety and expediency. Dr. Potter states that, in 1797, Rush's contention that the disease was contagious was first publicly attacked by Dr. John B. Davidge, one of the founders and the first professor of surgery and obstetrics in this school, whose paper was published in the *Federal Gazette* of Baltimore, on the thirtieth day of November, 1797. Dr. Davidge subsequently enlarged his paper and embodied it in a volume entitled 'Physical Sketches' published in Baltimore in 1814."

ARMY MEDICAL CORPS EXAMINATIONS.

Preliminary examinations for appointment of assistant surgeons in the Army will be held on May 1 and July 31, 1906, at points to be hereafter designated.

Permission to appear for examination can be obtained upon application to the Surgeon General, United States Army, Washington, D. C., from whom full information concerning the examination can be procured. The essential requirements to secure an invitation are that the applicant shall be a citizen of the United States; shall be between twenty-two and thirty years of age; a graduate of a medical school legally authorized to confer the degree of doctor of medicine; shall be of good moral character and habits; and shall have had at least one year's hospital training or its equivalent in practice. The examinations will be held concurrently throughout the country at points where boards can be convened. Due consideration will be given to the localities from which applications are received, in order to lessen the travelling expenses of applicant as much as possible.

In order to perfect all necessary arrangements for the examinations of May 1, applications must be complete and in possession of the Surgeon General on or before April 1. Early applications are, therefore, enjoined upon all interested applicants.

There are at present twenty-five vacancies in the Medical Corps of the Army.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, FEB. 10, 1906.

| CITIES. | Reported deaths in each. | | CITIES. | Reported deaths in each. | |
|------------------------|--------------------------|--------------------------|------------------------|--------------------------|--------------------------|
| | in each. | Deaths under five years. | | in each. | Deaths under five years. |
| New York | 1,498 | 500 | Quincy | 4 | 1 |
| Chicago | 566 | 276 | Waltham | 13 | 3 |
| Philadelphia | 581 | 189 | Glooucester | 2 | 1 |
| St. Louis | — | — | Pittsfield | 5 | 1 |
| Baltimore | 230 | 67 | Brookline | 5 | 1 |
| Cleveland | — | — | North Adams | 5 | 0 |
| Buffalo | — | — | Chenopce | 5 | 3 |
| Pittsburg | — | — | Northampton | 9 | 2 |
| Cincinnati | — | — | Mettford | 3 | 1 |
| Milwaukee | — | — | Beverly | 4 | 1 |
| Washington | — | — | Hyde Park | 4 | 0 |
| Providence | — | — | Newburyport | 6 | 1 |
| Boston | 244 | 65 | Leominster | — | — |
| Worcester | 39 | 11 | Melrose | 2 | 1 |
| Fall River | 32 | 12 | Woburn | 0 | — |
| Cambridge | 33 | 12 | Marlborough | 6 | 1 |
| Lowell | 23 | 16 | Westfield | 0 | — |
| Lynn | 31 | 9 | Peabody | — | — |
| New Bedford | 26 | 11 | Revere | 5 | 1 |
| Springfield | 21 | 4 | Clinton | 5 | 1 |
| Lawrence | 23 | 12 | Atholborough | — | — |
| Somerville | 16 | 7 | Adams | — | — |
| Holyoke | 24 | 7 | Gardner | 3 | 3 |
| Brookton | 16 | 6 | Milford | — | — |
| Malden | 5 | 1 | Weymouth | 3 | 1 |
| Salem | 17 | 6 | Framingham | — | — |
| Chelsea | 12 | 3 | Watertown | — | — |
| Haverhill | 14 | 6 | Plymouth | — | — |
| Seyton | 11 | 3 | Southbridge | 6 | 0 |
| Fitchburg | — | — | Wenfield | — | — |
| Taunton | 14 | 4 | Webster | — | — |
| Everett | 5 | — | | | |

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING FEBRUARY 14, 1906.

IRWIN, FAIRFAX, surgeon. Detailed as a member of Revenue-Cutter Service Retiring Board, to meet in Philadelphia, Penn., Feb. 15, 1906. Feb. 12, 1906.

OAKLEY, J. H., passed assistant surgeon. Granted leave of absence for one month from March 1, 1906. Feb. 9, 1906.

COMBING, H. S., passed assistant surgeon. Relieved from duty at San Francisco quarantine station and directed to proceed to Yokohama, Japan, for duty in office of American consulate, relieving Passed Assistant Surgeon Dunlop Moore, Feb. 9, 1906.

ROBERTSON, H. McCL., assistant surgeon. Detailed as member of the Revenue-Cutter Service Retiring Board, to meet in Philadelphia, Pa., Feb. 15, 1906. Feb. 12, 1906.

BAILEY, C. A., acting assistant surgeon. Granted thirty days' leave of absence from Feb. 13, 1906. Feb. 13, 1906.

BEHLARD, J. T., acting assistant surgeon. Granted leave of absence for thirty days from Feb. 13, 1906. Feb. 12, 1906.

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING FEBRUARY 17, 1906.

E. H. MARSHALLER, surgeon. Detached from the "Columbia" and ordered home to wait orders.

J. E. PAGE, surgeon. Detached from the "Franklin" and ordered to the "Columbia."

E. P. STONE, surgeon. Detached from the Naval Academy and ordered to the "Rhode Island," Feb. 19.

D. R. KIRK, surgeon. Detached from the "Boston" and ordered home to wait orders.

W. H. BELL, surgeon. Ordered to the "Nevada," Feb. 24.

F. C. COOK, surgeon. Detached from the "Nevada" and ordered to the Naval Academy.

R. R. RICHARDSON, passed assistant surgeon. Detached from the Naval Hospital, Mare Island, Cal., and ordered to the "Boston."

F. E. PORTER, assistant surgeon. Detached from the Naval Hospital, New York, N. Y., and ordered to the "Rhode Island," Feb. 19.

F. M. BRYAN, passed assistant surgeon. Detached from the Naval Hospital, Yokohama, Japan, and ordered home to wait orders.

SOCIETY NOTICES.

THE AMERICAN CLIMATOLOGICAL ASSOCIATION.—The annual meeting of the American Climatological Association will be held May 12-14 at Atlantic City. The Marlborough-Blenheim will be the headquarters of the association.

HARVARD MEDICAL SOCIETY OF NEW YORK CITY.—At the regular meeting, Saturday evening, Feb. 24, Dr. Frederick C. Shattuck of Boston will read a paper on the present course of instruction in the Harvard Medical School.

J. HILTON WATERMAN, M.D., Secretary.
EDWARD K. DUNHAM, M.D., President.

LECTURE.

THE MIDDLETON GOLDSMITH LECTURE.—This lecture of the New York Pathological Society will be delivered at the New York Academy of Medicine, No. 17 West 43d Street, on Friday evening, Feb. 23, at 8:30 o'clock, by Ludvig Hektoen, M.D., professor of pathology in the University of Chicago and director of the Memorial Institute for Infectious Diseases, Subject: Phagocytosis.

E. K. DUNHAM, M.D., Secretary.

BOSTON BOARD OF HEALTH.

APPOINTMENTS.

MR. WILLIAM H. HAYES of the Charlestown District has been appointed by Mayor Fitzgerald a commissioner of health in place of Mr. Dennis J. Hearn of the Dorchester District, resigned. The appointment is for three years from May 1.

RECENT DEATHS.

WESLEY DAVIS, M.D., M.M.S.S., died in Worcester, Feb. 16, 1906, aged sixty-five years.

DR. PENROCK BROWNING ROGERS, an interne of the Manhattan Eye, Ear and Throat Hospital, New York, died at that institution on Feb. 11. He was the son of Gen. William C. Rogers, U.S.A., now living in Washington.

DR. WILLIAM V. MCKENZIE, president of the Middlesex County Medical Society, died on Feb. 14 at his home in Metuchen, N. J. Dr. McKenzie was also president of the Metuchen Board of Education and a member of the Board of Health.

BOOKS AND PAMPHLETS RECEIVED.

Clinical Treatises on the Pathology and Therapy of Disorders of Metabolism and Nutrition. By Prof. Dr. Carl von Noorden. Authorized American translation. Edited by Boardman Reed, M.D. Translated by Florence Buchanan, D.Sc., and I. Walker Hall, M.D. Part VII. New York: E. B. Treat & Co., 1905.

Text-Book of Anatomy. Edited by D. J. Cunningham, F.R.S., M.D. (Edin. et Dubl.), D.Sc., LL.D. (Glasg. et St. And.), D.C.L. (Oxon.) Second and thoroughly revised edition. Illustrated. New York: William Wood & Co., 1905.

Anatomy, Descriptive and Surgical. By Henry Gray, F.R.S., Edited by T. Pickering Pick, F.R.C.S., and Robert Howden, M.A., M.B., C.M. New American edition, thoroughly revised and reissued with additions by John Chalmers, Da Costa, M.D. Illustrated. Philadelphia and New York: Lea Brothers & Co., 1905.

Indigestion. The Diagnosis and Treatment of the Functional Derangements of the Stomach. With an Appendix on the Preparation of Food by Cooking with Especial Reference to its Use in the Treatment of Affections of the Stomach. By George Herschell, M.D. Lond. Third edition, entirely rewritten. Chicago: W. T. Keener & Co. London: Henry J. Glashier, 1905.

The Treatment of Diseases of the Eye. By Dr. Victor Hanke. Translated by J. Herbert Parsons, B.S., D.Sc., F.R.C.S., and George Coats, M.D., F.R.C.S. Chicago: W. T. Keener & Co. London: Hodder & Stoughton, 1905.

Laboratory Manual of Physiology. By Frederick C. Busch, B.S., M.D. Illustrated. New York: William Wood & Co., 1905.

Rupture of the Gall Bladder. By Benjamin Merrill Ricketts, Ph.B., M.D. Reprint.

Minor and Operative Surgery, including Bandaging. By Henry R. Wharton, M.D. Sixth edition, enlarged and thoroughly revised. Illustrated. Philadelphia and New York: Lea Brothers & Co., 1905.

Genito-Urinary Surgery and Venereal Diseases. By J. William White, M.D., and Edward Martin, M.D. Sixth edition. Illustrated. Philadelphia and London: J. B. Lippincott Co., 1905.

Original Articles.

THE MEDICAL PROFESSION AND THE MEDICAL JOURNALS IN RELATION TO NOSTRUMS.*

BY FRANK BILLINGS, M.D., CHICAGO.

PRIMARILY the medical profession is to blame for the present extensive use of proprietary medicines, the majority of which are nostrums. The law of demand and supply applies here; if we did not prescribe them, they would not be manufactured. "There's millions in it." The medical profession is blind, for we do not see that we are the dupes of men as fertile as Colonel Sellers in schemes and far more practical than he in that they put their plans through to a finish. Commercial cupidity exists in all walks of life. It is small cause for wonder that shrewd men should take advantage of an opportunity that is lucrative and at the same time so easily worked.

The chief causes, as it seems to me, are evident. A large number of the medical profession do not practice medicine rationally. They have no clear conception of disease processes. They do not study and examine their patients. No diagnosis is made at all or only from subjective conditions. Symptoms not conditions are treated. Headache, backache, indigestion, albuminuria, cough, constipation, dysmenorrhea, insomnia, nausea, dyspnea, etc., call for drugs with usually no attempt to get at the underlying cause. I regret to say it, but I believe that many, many physicians practise medicine on that basis. Think for a moment of the vast number of proprietary mixtures, usually nostrums, advertised and distributed in samples to physicians as symptomatic cures.

This sort of practice requires a vast number of these nostrums. He who treats symptoms must necessarily change the medicine from time to time to satisfy and "hold" his patients. He relies upon ready-made, symptom-indicated, dose-directed, usually palatable medicine. He believes what he reads in the "literature" of nostrums sent to him or as it appears in the advertisement found in his medical journal. He forgets that this testimony is inserted for pay. He sees testimonials from professors and practitioners praising the remedy and he believes.

But he is fickle and drops his last specific cure all for a new one which comes to him in sample by mail, or is presented to him by the travelling agent in a confidential and instructive way, and again he believes. He forgets that this agent is either a doctor who has failed as a practitioner, or is an ex-drug clerk whose full worth is commanded by ten or fifteen dollars per week. Usually he is told that the preparation is *ethical*; that its formula is given, usually, however, without indicating the amount of the constituents of the mixture contained in a dose. The process of manufacture is dwelt upon, "after painstaking research" the mixture is so put up that new and heretofore unheard of potency is developed in it.

It is a common experience of druggists to have a rush of prescriptions for a nostrum, which has just been sampled to the physicians in the neighborhood.

For ways that are dark the exploiters of copyright preparations are sufficient and proficient. The nomenclature of these compounds is a wonder. No especial system is followed. A catchy name appears to be the main thing. The name may consist of a euphonious combination of the alleged ingredients; of a morbid symptom or process combined with a drug; of a name indicating the alleged number of ingredients in the mixture, or of any coined word that is striking in print or sound. So we have Sanmetto, Ferroleum, Salochinin, and Peptomangan, Urie-antagon, Antiphlogistine, Zymotocine, Gonosan, Anasarem and Antikanania; Dufonol, Quartonol and Sextonol; and Urtolene, Chloron, Cystogen, etc. Apetizo makes one hungry, and it is said to be an iron food, but Apetol is a strengthener which strengthens, composed of a dozen or more drugs; Rheumagon suggests a possibility that the "rheum" had "gone," but it is said to contain sodium iodide and sodium phosphate and to cure rheumatism and all conditions resulting from uric acid in excess and disturbed metabolism. This is not the only uric acid annihilator for they are numberless. The average proprietor of a trademark preparation looks upon uric acid as one if not the worst enemy of mankind. He offers us uric acid solvents in the form of natural mineral waters (recently these are radio-active as well), artificial waters, salines, plums and effervescent — all things to "touch the liver," and so every one concerned is happy except a majority of the patients.

Often a chemical or drug is used by different proprietary firms in a mixture of other, often, indifferent, substances and presented in powders, tablets, etc., under different copyright names. For instance: Hexymethylenetetramine which is recognized as an excellent antiseptic in diseases of the urinary apparatus is exploited under a dozen or more trade names by as many firms. Cystogen, uniform and auroform are examples. Aetamid is exhibited in mixtures as Bromoseltzer, Antikanan Orangeine, Phenidin, Anemonol, Migraine, etc., by different proprietary houses. Some of these mixtures have even been presented as synthetic chemicals. Well informed physicians believed this until the Council on Pharmacy and Chemistry of the American Medical Association made known the formula after analysis of the mixtures.

It may be well to say that mixtures which contain poisons like opium and other drugs, chloral, cocaine, trepan, etc., and other drugs, etc., should be properly labeled with the name of the drug contained in the mixture. It is common to see cocaine in the eye of a patient suffering from a chronic ocular condition, owing to the continued use of the mixture, or a mixture containing opium, but which is not so labeled, the presence of the drug in the preparation is never advertised as a cure for fever, etc., or simply

* Read at a Library Meeting of the Suffolk District Medical Society (Medical Section), Jan. 3, 1906.

etc., as tonics, as "bracers," etc. I'm very sorry acetanilid was made officinal in the last pharmacopoeia as "pulsif acetanilidi compositus." I think it too dangerous a drug to be used as a medicine, and especially when we have so many harmless substitutes.

But to return to the nomenclature. It is contrary to all scientific standing and progress. It is meaningless. Without a scientific terminology, pharmaceutical preparations cannot be studied or learned. The deception practised by the nomenclature of nostrum is detrimental to all scientific progress and to the morals of the profession and is harmful to humanity. But the nomenclature is linked with a most astounding statement of physiologic action and therapeutic indication in the "literature" of these preparations and in the advertisements in medical journals. Let me quote a few of these statements:

"Hexamine." "It is invaluable in cystitis of all kinds, albuminuria, bacteriuria, gout, gravel, incontinence of urine, pyelitis, irritable bladder from any cause. In typhoid fever it prevents the spread of the infection and destroys the colon bacillus."

Who could ask for anything more definite and universally applicable?

"Sanmetto is not an excitant or stimulant. Its purpose is soothing, healing, restoring. It soothes the irritation, heals the diseased mucous membrane and restores tone to the enfeebled parts. By its use the genito-urinary organs are built up to a state normal with the age of the patient, and thus at the same time any pathological conditions that may be present as a result of their impairment are relieved or cured."

This negative and positive statement of a tonic which soothes and heals and does not excite or stimulate but cures is better than the fabled fountain of youth.

"Antiphlogistine." "It depletes the visceral vessels by flushing the superficial capillaries, bleeds, but saves the blood."

I wonder if any sensible, thinking doctor believes this. If he does I should like to know why.

"Cascia-Metris." "A laxative utero-ovarian tonic, alterative and sedative." "It contains the purely active matter from aletris, cramp bark, wild yam, squaw vine, black haw, blue cohosh, golden seal and cascara sagrada, the inert and objectionable elements being eliminated. Free from alcohol and sugar. Very palatable. A decided advance in modern therapeutics."

Could you ask for any better example of a "shot-gun" dose and that, too, a laxative, a tonic, a sedative and alterative?

"Tongaline." "Antirheumatic, Antineuralgic, Cures rheumatism, sciatica, lumbago, grippe, neuralgia, malaria, headache, gout, because Tongaline contains standard remedial agents of absolute purity, combined with salicylic acid made from the natural oil of wintergreen. Tongaline acts upon the poisonous products of retained excretion or perverted secretion,

and eliminates them promptly and thoroughly, thus insuring in every instance certain results from certain doses in certain time."

Verily, this is too much! At this rate there will be no reason to die. The practice of medicine with Tongaline is too easy.

"Pil Orientalis (Thompson)." "The therapeutic value of ambrosia orientalis (imported solely for ourselves) as a powerful nerve and brain tonic and powerful stimulant of the reproductive organs, in both sexes, cannot be overestimated. It is not an irritant to the organ of generation but a recuperator and supporter."

This ought to answer once and for all time the statement of certain quack advertisers of "Lost manhood, how restored!"

"Sulpho-Lythin." "Is a true hepatic stimulant intestinal antiseptic, antizymotic and toxine eliminator."

This is almost as good as the statement of the old woman of Irish extraction who praised the effect on the bowels of sulphur and molasses, "Sure the molasses iles 'em and the sulphur moves 'em."

"Anasarcin." "Absolute cure of dropsy caused from heart, liver or kidney troubles."

"These are strong words but they are justifiable. From every quarter come enthusiastic reports of clinical results accomplished by prescribing anasarcin not only in dropsies but in exophthalmic goitre. All those natural speculations in the doctor's mind as to the usefulness of this remedy should be immediately dismissed."

The statement of an absolute cure for dropsy of any cause is enough to condemn a preparation.

"Glycozone is daily making converts among physicians for its wonderful work in inflammatory and contagious diseases of the alimentary canal. It is the rational treatment in gastric and intestinal disorders, such as dyspepsia, gastritis, gastric ulcer and all contagious and inflammatory diseases of the stomach and intestines."

Such converts as this stuff makes among physicians are not worth saving.

"Physicians everywhere prescribe Triacol Alpers with unequalled success and perfect satisfaction in bronchitis, coughs, pharyngitis, laryngitis, phthisis, tuberculosis. They prescribe it because it cures."

It is prescribed because it cures *tuberculosis*, bronchitis, laryngitis, etc. The physician who would prescribe it upon the basis of the statement made should have his license taken from him.

"Aletris Cordial Rio is indicated as a prophylactic remedy against post-partum hemorrhage, uterine weakness, great development of the fetus and of the adnexa and in those cases where there is a disposition to hemorrhage."

A prophylactic against uterine weakness. (What is it?) Great development of the fetus! Good Lord! What next?

These are some of the statements made in the

advertisements of a few of the many proprietary medicines. The majority of the quotations are from medical journals. One is not surprised to receive the scarlet literature of the nostrums through the mail nor is one especially shocked to find impossible cures and astounding statements in the medical trade journals, for such journals are published wholly in the interest of proprietary houses.

But one is disturbed to find that the regular and otherwise respectable medical journals publish such rubbish as I have quoted. Such advertisements will be found in the *Medical Record*, *New York Medical Journal*, *The Medical News*, *The Boston Medical and Surgical Journal*, *American Medicine*, *British Medical Journal* and *London Lancet*. Recently the pages of the *Journal of the American Medical Association* have been purged of some of the objectionable advertisements, but still contain some medicines with very objectionable statements as to therapeutic effect.

Now I, and I think most people, believe that the advertising pages of a medical journal are a legitimate part of the publication. Editorial responsibility should extend to every part of it. There can be no question of the harmful effects upon the profession of the flood of nostrums. It is, therefore, injurious to promote in any way the use of them. The editor of a medical journal cannot escape the responsibility of the character of the reading matter, and the influence it may have, which appears in his journal.

The term "ethical" appears in many of the statements of the proprietors of nostrums. The word covers a multitude of sins. The standard dictionary defines ethics as "The science of human duty; the science of right character and conduct." The alleged curative properties of preparations quoted above and of many others advertised in medical journals and in the other "literature" circulated in various ways, do not conform in any way with the definition of the word.

Indeed, the method of advertising these "ethical" preparations in the medical press would with very little alteration fit any "patent" medicine advertised. To illustrate I quote from the lay press:

"What is Castoria? Castoria is a harmless substitute for castor oil, paregoric and soothing syrup. It is pleasant. It contains neither opium, morphine nor other narcotic substance. Its age is its guarantee. It destroys worms and allays feverishness. It cures diarrhea and wind-colic. It relieves teething troubles, cures constipation and flatulency. It assimilates the food, regulates the stomach and bowels, gives healthy and natural sleep. The children's panacea - the mother's friend."

This is like the ethical advertisement in positiveness of statement, both affirmative and negative.

"Tonsiline is the greatest throat remedy on earth. Tonsiline cures sore throat of all kinds more quickly, and is a positive never-failing and speedy cure for sore mouth, hoarseness and quinsy."

As this appears in a newspaper, the profession will say it is a quackish statement made to fool the laity. But as bad and worse statements concerning nostrums appear in medical journals,

"Ask your own doctor: if he tells you to take Ayer's Cherry Pectoral for your severe cough or bronchial trouble, then take it. If he has anything better, then take that, only get well as soon as possible; that's the object. Doctors have prescribed this medicine for sixty years. We have no secrets. We publish the formulas of all our medicines."

Now, can you see any great difference in the alleged curative powers and the therapeutic indications of the preparations quoted from the lay journals and the medical press? In fact, there is none. The language used in the advertisement placed in the medical journal is a little more technical and for that reason is often not as rational as the statement made in the lay press.

The medical press is an educator. Through it, more than by any other means, medical knowledge is widely disseminated. It is a power which, when properly directed, yields untold riches for the benefit of the medical profession. But it has an equal power for evil. If it, as an educator, contains material which is false and misleading, even though this is confined to its advertising pages, it does an infinite harm to the profession and to mankind.

I have not met an editor who defends the practice of advertising nostrums. Confessedly, it is done for money, not for the editor, but for the publisher. The excuse offered is that the editor is engaged to edit the medical articles; the publishers print the journal and supervise the advertising department. But this is not explained to the reader. To the average man all printed statement is fact. He believes the printed word, when he would doubt the oral statement. This is the result of our methods of education of children. They are taught to believe all they read. Many persons never discover the fact that as Burns says:

"Some books are lies frae end to end"

And some great lies were never ken'd,

Ev'n ministers, they hae been ken'd,

In holy rapture,

A rousing whid, at times, to vend,

And na'd't wi' Scripture."

The proprietary medicine evil is due chiefly to the credulity of the medical profession. The cupidity of the proprietors and promoters is the second cause, and, unfortunately, the medical journal lends itself to the exploitation of the nostrum. Few of us, probably, realize the extent to which the use of proprietary medicine has grown in a short period of time. To judge by the prescriptions filled in drug stores of large cities, at least 50% of the profession use proprietary medicines.

The statement is made that in New York City about 70% of the prescriptions filled in large drug stores call for a proprietary preparation. The

¹ James J. Walsh, M.D. *Jour. Am. Med. Assoc.*, Vol. 45, No. 2, p. 1702.

statement is a general one and probably not definite. In Chicago I have secured data from two drug stores. In one large down-town drug store 42% of the prescriptions contained a proprietary medicine. This pharmacy fills the prescriptions of physicians who, in many instances, occupy high places in the profession. The second drug store is in a residence neighborhood where chiefly the prescriptions of the family physicians are filled. This showed about 50% of prescriptions calling for out-and-out proprietary mixtures, or containing in part a proprietary chemical or drug. One prescription was for Castoria and California Fig Syrup, equal parts, with directions to take a teaspoonful every two hours. In Boston, there was secured the data from two of the best known druggists. In one, in which 14,895 prescriptions were filled in a year, 38% were proprietary; in the second, in which 12,000 prescriptions were filled in a year, 48% called for proprietary medicines.

Modern medicine has established the fact that specific medication for disease is very limited. The specific sera, used as antitoxins and bactericides, organotherapy in a very limited field; quinine in malaria, and mercury and the iodides in syphilis, comprise the list. A rational use of drugs, preferably in simple form, to stimulate or to maintain the physiologic function of organs embarrassed by unhygienic habits, by an acute infective process or partially crippled by a morbid anatomic process, is the chief reliance of the physician. Palliation of suffering is an important therapeutic measure. The rational, careful and conscientious physician primarily attempts to make a definite diagnosis. The removal of the cause when possible is an important step, with a rational management of the personal hygiene. The drug treatment may be a very important part of the management and it requires a fine judgment to know when and what as well as when not to give drugs in disease.

The pharmacopeia furnishes a list and description of chemicals and drugs, more than enough to meet the wants of the most ardent believer in drug therapy. A good pharmacist can furnish him with the official water, pill, powder, spirit, solution, elixir, tincture, fluid extract, syrup, etc., of the drugs he prescribes. The pharmacist will give him the complete and definite official mixtures. He will be able to furnish his patient with drugs at their true value. The pharmacist will not be obliged to pay an hundred-fold price for the proprietary preparation which in the end is assessed upon the patient. Acetanilid may be bought for not more than 25 or 30 cents per pound. If prescribed in the copy-right preparations it costs many times the trade price.

Scientific progress, professional integrity and character and economy demand the restriction of the proprietary medicine evil. To restrict it the medical schools should teach the student more fully and adequately botany, pharmacology and therapeutics. The medical graduate must know how to observe and interpret the phenomena of

disease and he must know equally well the materials and how to use them, with which he may combat disease. He should know pharmacology and prescription writing. He should know the therapeutic value and power of drugs and their limitations. With a proper fundamental knowledge of this kind, the daily experience will add valuable information in drug therapy which will not be disturbed by the alluring advertisement of the nostrum exploiter.

To overcome the present evil will require publicity. By this means we may be able to arouse the dormant good sense of our erring brother practitioner and induce him to use simple, tried and official drugs. We must induce the doctor to attend medical meetings and to rub against his fellows. But at these meetings we must not permit the exhibition, under our auspices, of pyramids of proprietary medicines and stacks of more "literature" than is offered at the scientific sessions.

We must discountenance the practice of the "faculty" and the practitioner in writing testimonials of the wonderful effects of these cure-alls.

We must induce our medical journals to stop advertising nostrums. The editors of the great journals of the country are to be numbered among the best members of the profession. They can, if they choose to do so, permit the advertisement only of those proprietary medicines which furnish for publication, in the advertisement, an authentic, definite and complete formula. They should also edit the reading matter of allowable advertisements and prevent the abuse of over-statement and the publications of untruths. Secret mixtures and mixtures with incomplete formulae, or with indefinite statements as to the constituents should be refused space in the reputable medical press. With the publication of accurate formulae the physician would be able to judge of the possible virtues of the mixtures. To most of us mixtures with known formula are objectionable. Disease is never quite the same in different individuals and the morbid phenomena are not often expressed the same from hour to hour and day to day. The treatment must be modified to meet the varying problem of the morbid process. This can be done much more helpfully with simple drugs than with intricate mixtures. Secrecy is essential to the success of the nostrum evil. Publicity will kill it. Publicity will educate the physician and the public and teach them not to use secret mixtures which often contain poisonous chemicals or drugs which are kept secret for the purpose of assigning to them alleged virtues and that an extravagant price may be obtained.

Finally, I desire to express sorrow that the present status of the nostrum evil compels me to say a word of complaint of the medical profession. Many physicians to whom I have talked have expressed themselves as more or less guilty of prescribing proprietary preparations. All agree that it has been done thoughtlessly and that its practice has insidiously grown upon them. Many have said it is unnecessary, is detrimental to

scientific medicine, and that the exposé of the Council on Pharmacy and Chemistry would have a most decided effect in educating the profession not to use nostrums.

READY-MADE REMEDIES.*

BY FRANK G. WHEATLEY, M.D., NORTH ABINGTON,
Professor *Materia Medica and Therapeutics*, Tufts Medical College

To add anything of value to what has already been said on the subject of patent and proprietary medicines before nearly every gathering of medical men in the United States during the last year seems somewhat hopeless, but an earnest conviction that the medical profession is in some degree responsible for the present deplorable condition of affairs, and has a certain duty to perform in the warfare against the evil, together with the very kind and flattering invitation of your president, accounts for my presence here.

At the risk of repeating what may have been said many times, I propose to call your attention to recognized definitions of patent and proprietary medicines, to comment briefly on the harm wrought by them, to consider the extent to which the profession have aided in bringing about the present state of affairs, and, finally, to suggest our duty to the public in the future.

"A proprietary medicine is one, the manufacture or sale of which is restricted through patent of the drug, or combination of drugs, of the label, or of the name, or otherwise, or a medicine concerning which the person making it claims a private formula."

"A patent medicine is a drug which is patented, or the name of which is patented; but usually any drug, the manufacture and sale of which is restricted in any way, whether by patent of substance, name, label, or the like, or by secrecy as to the nature and method of preparation."

A careful consideration of these definitions makes it clear that for medical purposes patented and proprietary medicines are alike. I think it will also be granted that the object in either case is pecuniary gain. I know that it is claimed by the proprietors that the object is to secure to the public reliable preparations, but with the wholesale exposures of fraud in this connection staring them in the face, this claim can hardly be maintained. If it be true that any one working in the interests of scientific medicine has discovered some new remedy of value, or some new method of combining old remedies that is an improvement, what is his duty? As well might the surgeon who had hit upon some new device in operative surgery proceed to protect his device by letters patent and perform his operation behind closed doors for a special fee. To say that anything that has to do with the treatment of the sick should be restricted in this way is to say that the practice of medicine is commercialism pure and simple.

It is a matter of common knowledge that the

consumption of this class of products is enormous. That the public is injured physically, morally and financially by these alleged remedies is, I think, not open to question. If it be true, and I am not disposed to dispute it, that a few of these medicines are intrinsically valuable, they make up a very small percentage of the whole, and are in no single instance indispensable to the successful practice of the healing art. Indeed, in my judgment, the prescribing of these few intrinsically valuable remedies by the profession is, on the whole, a monumental blunder and works an endless amount of harm. Probably no one of us would think of prescribing *Peruna* instead of the official *spiritus frumenti*, if we wanted to tickle our patient's palate with a cocktail, but possibly some might order *Listerine* instead of a simple solution of boric acid, and what is the result? Financially, we have robbed our patient, for it has been demonstrated that as much antiseptic value can be obtained from a solution of any of the common antiseptics for one cent, as \$1.95 worth of *Listerine* carries. But the financial aspect, though serious, is not the worst side of it. When a prominent member of the profession writes a prescription for a protected article, he not only puts the seal of his approval on that particular article, but he, unwittingly, of course, throws the weight of his influence in favor of the whole class of remedies. The public are quick to jump at conclusions, and they will say if *Listerine*, a ready-made medicine, is recognized by the doctor, it is fair to suppose that *Peruna* must also be good. Not logical, you say? Granted; but the public is not skilled in logic, and I know from personal observation that exactly that conclusion is reached by them.

That most of us have at sundry times, and in sundry ways, aided and abetted in the use of these remedies, few of us will, I think, have the hardihood to deny. Do any of us do it for our own profit? "Does the jingle of the guinea help the hurt that honor feels?" I am not willing to believe that this is commonly true. Why, then, do we prescribe ready-made medicines? Probably most of us would say because better results are obtained. In some cases I presume this is true. But why is it true? Simply because the average physician of to-day does not know enough about the science and art of prescription writing. If some second Wendell Phillips should talk to this generation about the lost arts, he might well include prescription writing in the list. This ignorance is one of the results of a movement which date back to Bacon's "Essay on the Self Limitation of Disease," a movement which has led us to the brink of therapeutic nihilism, if indeed it has not carried some of us to the bottom of the pit. The emphasis that has been placed upon the importance of hygienic surroundings, proper diet, etc., has led us to look upon drug treatment as something of very little moment. Not many years ago I heard a prominent member of the profession at public lecture in Boston that a medical man should give very little time to the subject

*Read at a Library Meeting of the Suffolk District Medical Society (Medical Section), Jan. 3, 1908.

that if the student was taught not to give anything till he had read up the subject, or consulted with some one of experience, he would get along all right in most cases. If this theory were applied to every branch of medical science, we could very materially shorten the required course in our medical schools. Our medical students must be impressed with the fact that there are certain definite results that can be obtained by the use of drugs, and that a thorough knowledge of prescription writing is a *sine qua non* to a degree. If the student is taught that definite results can be obtained by scientific medication, and is made familiar with all the agents that are considered official, he will be in no need of these ready-made medicines. Most of us prefer a suit of clothes made especially for us, though some of us may be compelled, for financial reasons, to wear the suit made for the average man of our size. But certainly our patients who call us for professional advice have the right to expect from us a prescription adapted to the individual needs of the case, rather than one ready made that has to recommend it the dictum of a financially interested manufacturer. The point I wish to make is that it is sheer ignorance, and an ignorance fostered by our medical schools, that leads the practitioner to say that the ready-made article is superior to the individual prescription, and it is incumbent upon those who have to do with medical education to graduate those who can beat the ready-made article with one made to order. That this tendency to therapeutic nihilism is not confined to Boston, nor to America, is proven by the fact that not long since at a meeting of the leading physicians of Paris an association was formed for the post-graduate study of drugs, the reason given for this movement being that the average graduate of to-day knows little or nothing of the subject. The newly published pharmacopeia contains the names of all the agents that are needed to successfully compete with the ready-made, protected article, and even if a single or several agents of the ready-made class were equal or superior to any that could be obtained in any other way (a condition that in my opinion does not exist), we would still be doing more harm than good in ordering the ready-made article.

A second excuse for prescribing the ready-made article would, perhaps, be that it was an easier thing to do. This is undoubtedly true, but it would be still easier and in most cases better for the patient, to prescribe nothing. That the leaders in the profession do it would, perhaps, be another excuse. But by so doing they lessen the validity of their claim to leadership, and give proof of lack of education, laziness, or an ape-like imitiveness. That commercialism is back of the whole matter there is no doubt. Take away the money-making feature, and the whole fabric would fall with the classic "dull, sickening thud." The financial side of the question involves not only the manufacturers, but the communities in which their business is carried on, and almost the entire press of the

country. If one doubts the tremendous opposition that any legislation that interferes with the business is sure to encounter, let him attend a hearing before a legislative committee. The fellow-townsmen of Lydia Pinkham, or her descendants, J. C. Ayer & Co., and denizens of other municipalities where the business is carried on, advertising agencies, the drug trade, with some honorable exceptions, join forces with the manufacturers to prevent legislative interference. The question is often asked, What is an ethical proprietary preparation? I know of none. In my judgment, the time has come when, in the interests of the public, we are called upon to ignore the whole list. The last national Pharmacopeia has just been issued, and the Dispensary which accompanies it treats of all the agents we need to use. If we will confine our prescribing to articles recognized by this national authority, we shall confer one of the greatest boons upon the public, and, incidentally, upon ourselves, that the annals of medicine record.

PHOTOPHOBIA: A NASAL REFLEX.

BY EDMUND D. SPEAR, M.D., BOSTON.

² *Ἦν δὲ τοῖς μὲν ὀφθαλμοῖς ἐπικολοῖμα τῆς χιόνος ἐλ τις μέλαν τι ἔχων πρὸ τῶν ὀφθαλμῶν πορεύετο. — Xenophon, *Expeditio Cyri*.*

Nor all the Greek soldiers suffered from snow blindness, and in our day the majority of people can gaze with impunity upon "the blinding snow"; which facts give evidence that the eyes are automatically protected from injury from exposure to bright light.

Omitting cases of refractive error, or including those in which the error has been corrected by suitable lenses, it is plain that it is not the eye alone which produces the symptom-reflex known as photophobia.

Neglecting the modern theories regarding effects upon vision from certain rays at the upper end of the spectrum and considering those of light as we know it, it may be inferred that the normal functions of the percipient apparatus are interfered with in some way by conditions within neighboring structures. That there is a relationship existing between the so-called erectile tissues within the nose and not unlikely, in a direct way, with similar tissues about the ciliary regions of the eye has already been shown by many authors, notably among these Ziem, of Dantzie. His first experiments upon growing animals (1879) showing so clearly a direct influence upon development of the orbit and position of the same with relation to the face that it is now easy to predict the course of an obstructive disease of the nasal chambers throughout the life of the individual.

One of the normal reflexes, that of sneezing, will here suffice for an illustration of my contention that photophobia is a nasal reflex.

It is a common experience to have a bright light induce sneezing. No one can suppose that the eye itself is the real source of the irritation which produces the sneeze. The eye serves

merely to convey the impression to the brain (or spinal cord) which, transmitted by the sensitive filaments of the fifth nerve in the nose and more especially in the regions above the turbinates, is sent inwardly again through connecting ganglia to motor nerves which terminate in the thoracic muscles.

The so-called hay-fever paroxysms form an exaggerated type of physiological reflex. These may include all the normal nasal reflexes, lachrymation, sneezing, coughing, hicough and sometimes vertigo with nausea and retching.

I shall illustrate my contention with but a single case which is typical of all such cases, which vary in degree, but not in kind.

A young man employed as a bell-boy in a hotel and obliged to await the calls in front of a row of electric arc lamps was unable to endure what had become a source of torture to him without constantly shading his eyes with his hands. Examination showed no defects of vision. His nose, however, was obstructed throughout the middle fosse by large hypertrophied turbinates. Direct applications to these swellings produced none of the nasal reflex symptoms. Several weeks of treatment, however, brought about a normal degree of sensitiveness so that an application was promptly followed by lachrymation, sneezing and nasal secretion. It was interesting to note that as improvement in his condition took place a bright light would bring on a paroxysm of sneezing, the onset of which was delayed longer each time until finally the light would not cause reaction.

The inference from such an experience should be, therefore, that when light causes sneezing there must be a degree of hypersensitiveness of the nasal membranes, and that when light causes one to blink or wrinkle one's forehead the nose is at fault rather than the eyes themselves. It was not my intention to adduce photophobia as a cause of wrinkles, because many individuals contract the palpebral fissures in order to "stop down" the light in order to obtain clearness of vision.

New Instrument.

NEW INSTRUMENT. TONSIL SCISSORS.

BY JOHN H. BARNETT, M.D., BOSTON,
Assistant, Nose and Throat Department, Boston Dispensary.

In many operations upon and about the tonsils, particularly in children, the ordinary tonsil knives are often impractical, and are never free from danger. To facilitate necessary operative treatment, and to minimize accidents, these tonsil scissors were designed; and have been used by me for some time to incise the follicles of the tonsils, particularly in cases where the patient refuses tonsilotomy, in hard and fibrous tonsils, and more especially, in cases of acute and chronic lacunar tonsillitis.

The shafts of these scissors are 15.5 cm. in length (which is the length of the Hooper adenoid

forceps), with a curved cutting end of 2 cm. in length which is at a radius of 90° from the shaft. The ends are blunt, and the edges are moderately serrated; and the instrument can be used on either side with equal facility, thus affording an opportunity of completing a single or double operation without removing the scissors from the fauces of the patient. The instrument is a very manageable one, having no tendency to invade the area outside that which it is intended to reach; and this is still further guarded against by the fact that the edges of the scissors are serrated, thus preventing the instrument from slipping. The tendency to hemorrhage is also much less than by the use of any tonsil knives. Multiple slits may be made, either vertically or laterally, and portions of the tonsil may be excised at the time of opening of the crypts if necessary.



In cases of acute lacunar tonsillitis, the tonsils are hyperemic and swollen and the lacunae are distended with masses of thick, yellowish-white, cheesy material. In the chronic form of lacunar tonsillitis, the patient is frequently annoyed by recurrent attacks of acute inflammation, as well as by a constant foul, nauseating odor and taste due to the expulsion of one or more of these lacunar plugs into the fauces or the mouth; when by a thorough incising of the lacunae, the attack is shortened in the acute cases, and future attacks in the chronic cases are prevented. Acute attacks, which usually continue for a week or ten days, have been entirely relieved in twenty-four hours after such incising. The application of medicines to the tonsillar tissue is also greatly facilitated after incision; and the lacunar plugs are prevented from forming and being retained in the tonsillar tissue. In chronic cases, where one or more crypts are distended, or cause pain and frequently renewed inflammation, owing to the narrowing of their mouths, immediate relief is obtained by these incisions.

In many cases, one or more of the orifices of these crypts may open into the supratonsillar fossa, which thus forms a pocket for the collection of these cheesy masses, as well as of particles of food, which soon undergo decomposition, causing a foul odor to the breath and interfering with the appetite and digestion, and undoubtedly is often an underlying cause for a peritonsillar abscess. By incising these crypts and obliterating these pockets with the tonsil scissors, the patient is relieved from further trouble due to this annoying and unwholesome condition.

This instrument was made for me by Coleman & Sharpleff.

Clinical Department.

AMAUROTIC FAMILY IDIOCY: A REPORT OF FOUR CASES.*

BY ALEX. QUACKENBOSCH, A.M., M.D., BOSTON,
*Surgeon Massachusetts Charitable Eye and Ear Infirmary; Instructor
in Ophthalmology, Harvard Medical School.*

THIS rare disease of infancy was first described by Warren Tay at a meeting of the Ophthalmological Society of the United Kingdom in 1881. Since that time quite a number of cases have been seen by various observers, but so far as I have been able to ascertain, but one case has been reported as occurring in this vicinity; a case reported by Dr. Wadsworth at the meeting of the American Ophthalmological Society in 1887, as a "case of congenital zonular grayish-white opacity around the fovea"; four cases, three at the Infants' Hospital, and one at the Massachusetts Charitable Eye and Ear Infirmary, have come under my observation.

CASE I. Infants' Hospital, January, 1897. Male, aged fourteen months, of Jewish parents. Family history, good; two brothers and two sisters living and well, one child died of brain trouble at age of fourteen months. Previous history: Child born apparently normal and continued well for four or five months, then mother noticed that it appeared different from the other children, did not seem to gain in strength, was unable to sit up or hold the head up, the arms and legs were moved about in an aimless manner. At times the child cried stupidly, did not appear to see well. One month before entrance to the hospital the baby began to have convulsions. Physical examination: Well developed and nourished, stupid, unable to sit up, cannot hold head erect, extremities flabby and show marked loss of power. Heart and lungs negative. Ears negative. Knee jerks normal.

Examination of eyes reveal the characteristic grayish-white patch, in the macula region, in the center of which is a sharply defined red spot. Optic atrophy. This child was in the hospital at three different times and the prominent features were twitching of face, lids, corners of mouth, numerous convulsions often starting with a sigh and followed by laughter; the records state that the child "smacks its lips" a great deal.

Progressive loss of flesh and strength, death at the age of twenty-two months. No autopsy.

CASE II. Massachusetts Eye and Ear Infirmary, January, 1902. Service of Dr. Wadsworth. Male, aged fourteen months; first child, of Jewish parents.

This case was seen in the Out-Patient Department, hence no full report can be given. The eyes showed the characteristic change in the macula region, with optic atrophy.

This child died at the age of two years. No autopsy.

CASE III. Infants' Hospital, June, 1905. Female, age nineteen months, born in this country of Jewish parents. Family history, good; first child, no miscarriages, no children in either family that died in infancy of any brain trouble. Previous history: Breast fed for fourteen months; child apparently normal until three months of age, when mother consulted physician, but was told baby was all right. The child has never tried to walk or stand, is unable to sit up without falling over, cannot hold head up, never reaches for things or tries to play; very sensitive

and dislikes to be handled; rolls eyes about, but mother thinks child can see. Three weeks ago child began to have twitching of face and convulsions, since then has not taken food well. Always constipated. Physical examination: Well developed and nourished. Fair color; skin in good condition except on feet and buttocks; feet puffy and purple; circulation poor. No signs of rickets. No rigidity of head or neck. Spine flaccid; no spasm or paralysis of arms or legs. Knee jerks equal and not lively. No Kernig's sign; condition of stupor. Lungs normal except for few fine, moist râles at base. Heart, liver and spleen apparently normal. Lumbar puncture negative. Urine pale; 1,014; sl. acid; no albumin. Examination of eyes: Pupils equal and react to light, but child does not seem to follow light; eyes wander aimlessly. Myopia, myopic crescent about disk; optic atrophy; characteristic changes in macula region of each eye.

This case was under observation for about six weeks and, aside from the convulsions, the things noted were difficulty in feeding (the child had to be fed with a tube) and the hypersensitiveness to noise.

CASE IV.¹ Infants' Hospital, November, 1905. Joseph C., aged eighteen months, born of Jewish parents. First child. Family history negative. Previous history: Breast fed eight and one-half months. Child got along all right to the third or fourth month, then seemed to develop slowly; at eight months of age was not considered bright mentally. Has never sat up or attempted to stand or walk. The parents were unable to tell whether child could see or not. For past three weeks there has been a marked twitching of the face.

Physical examination: Under developed and nourished; very flabby skin; fair color; slight cyanosis of lips. Unable to hold up head. Fontanelle $\frac{3}{4}$ cm. but not tense, rather depressed. Cervical glands enlarged; no sign of rickets; incisor teeth, four upper and two lower. No evident paralysis of face or extremities; legs kept extended, resist attempt at flexing, but after rigidity is overcome, very flaccid. Unable to make out patella reflex. No ankle clonus. Heart, lungs, liver and spleen negative. Urine turbid; acid; no albumin; no sugar; 1,030. Lumbar puncture negative.

Examination of eyes reveals grayish-white patch, with brownish-red center, in the macula region of each eye. Optic atrophy. Pupils large and react. While in the hospital this child had to be fed with a tube.

The cause of this disease is unknown; the parents are generally healthy, without specific or tubercular taint, or history of intermarriage. With few exceptions, the cases reported have been of Jewish parentage. Hirsch has suggested that it may be due to a toxic condition produced by the mother's milk. Clairborne reports a case in which autopsy showed a tubercular tumor of the corpora quadrigemina about the size of a hickory nut, and Kuh reports a case in which there was hydrocephalus.

The disease often affects several members of the same family and it usually terminates fatally at about the end of the second year. Sex has no bearing. Infants are born apparently in good health and develop normally to the third or fifth month, then the muscles become weak and flabby, the baby cannot sit up or hold up head;

*Read at the Meeting of the New England Ophthalmological Society, November, 1905.

¹Case presented at meeting of New England Ophth. Society, Nov. 14, 1905.

the mental development is arrested, the child becomes dull and stupid, and this condition goes on to idiocy. Twitching of the face and extremities, together with convulsions, are common symptoms. There may be difficulty of feeding. The reflexes may be increased or not, in some cases absent. The disturbance in the eye is not congenital, but comes on with the general symptoms, when it is noticed that the child does not see well, or that it rolls the eyes about aimlessly. The first thing observed in the fundus is a haziness in the macula region, this develops into the typical grayish patch with a cherry-red spot in the center. This is followed by optic atrophy. Nystagmus has been observed.

For a number of years after Tay's first case, attention was confined solely to the ophthalmoscopic appearances, and Sachs was the first to state the fact that we had to deal with an extensive disease of the central nervous system. Sachs at first thought that this condition was due to an arrest of development, but he now believes, with other investigators, that the condition is a true degenerative one.

As a result of an autopsy Peterson concludes that the brain shows a defective development; his case showed a confluence of the central with the Sylvian fissure; the pathological conditions are limited to the nerve cells of the cortex and the medulla, which were found deficient in number and development.

Sachs found the convolutions small, a confluence of central with the fissure of Sylvius; thickening of arachnoid and pia mater, hardness of cortex. Degenerative changes were present in the cortex, in the cranial nerve nuclei, and in the anterior and posterior gray matter from the cervical to the lowest lumbar and sacral segments of the cord, the greatest change taking place in the larger ganglion cells. From this Sachs concludes that the disease affects to a great extent the entire gray matter of the brain and spinal cord.

Kingdon found a marked descending degeneration of the upper part of the cord.

Treacher Collins examined two cases of Kingdon's and he reported edema of the retina, but his examination was unsatisfactory, as the retina about the macula region was thrown in folds. Mohr found edema of the outer molecular layer, and a degeneration of the outer segments of the rods and cones of the retina.

Ward Holden examined the eyes of Peterson's case, but the results were unsatisfactory, owing to post-mortem changes. Holden also examined the eyes of Hirsch's case. One eye was hardened in Müller's fluid and one in formol. The one hardened in formol showed the gray patch at the macula region as seen during life. He reports no edema of the retina, but finds a marked degeneration of the ganglion cells of the retina, the cells being enlarged and altered in shape. This change in the ganglion cells explains the fundus picture: the oval gray patch occupies exactly that part of the retina where the enlarged and altered ganglion cells are thickest, and at the

fovea centralis, where the ganglion cells are wanting, the choroid shows through, by contrast, as a cherry-red spot. The optic nerve showed degenerative changes.

Shumway and Buchanan have confirmed Holden's views; they report no edema of the retina, but find marked degenerative changes in the ganglion cells.

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Medical Progress.

PROGRESS IN GENITO-URINARY SURGERY.

BY F. H. WATSON, M.D., AND PAUL FROHNIKE, M.D.

DIAGNOSIS OF AZOOSPERMIA.

The author¹ states that spermatozoa continue to be produced by the testicles whether the exits from these organs are occluded or not. He regards this as a really important fact as determining the possibility of operative cure in cases of azoospermia otherwise beyond help. To demonstrate the fact he has punctured the testis with a Pravaz needle in a series of patients who had previously suffered from acute epididymitis.

In 12 cases, punctured seven to twelve years after the acute inflammation, spermatozoa were found in all but 2. In 5 cases at a much later period after the occluding inflammation (twelve to twenty-six years) spermatozoa were found in only one instance.

EXPERIMENTAL POLYURIA.

In this paper, Albarran² after showing his excellent results in 64 cases of nephrectomy for renal tuberculosis, contrasts the unreliability of many of the methods in vogue for studying the renal function with those obtained by his own plan. This he calls "experimental polyuria." It consists in studying the elimination of the two kidneys separately under normal conditions and comparing these results with those obtained from a like study under conditions of forced polyuria produced by excessive water drinking. The specimens from each kidney are obtained by ureter catheterization. Albarran believes his results indicate this as the best method for obtaining knowledge of the real working capacity of each kidney.

REPAIR OF OPERATIVE INJURIES TO THE URETER.

By experiments on dogs the writers³ demonstrate that one ureter injured during an operation may be successfully implanted into the other.

¹ *Urolog.*, Berliner Klinische Wochenschrift, xvi, S. 17, Aug. 8, 1905.

² *Arch. intern. Presse Médicale*, Paris, N. 0, 79, No. 183, 1905, p. 190.

³ *Chirurgica*, Arch. Colombiana, Anales del Ministerio de Instr. Publ., General, Colombia, No. 4, No. 13.

EXCLUSION OF ONE KIDNEY.

This research⁴ from Jaboulay's clinic demonstrates that the exclusion of a kidney from further activity by the ligation of its ureter is possible and is a harmless procedure. Two cases are reported in confirmation of the research work done, one of them being an infected kidney.

RENAL ACTIVITY DURING ANESTHESIA.

In a series of experiments upon animals, the author⁵ showed that with both ether and chloroform, the secretion of urine is increased during the stages of incomplete anesthesia, but that during full anesthesia the secretion is greatly diminished. Both these results are more marked with ether than with chloroform anesthesia.⁶

The work is a study of the clinical effects of ether upon the renal activity of ten patients, by systematic observation of the urine before, during and after ether anesthesia. In every instance there was a very marked decrease in urine secretion by the time complete anesthesia was reached, and this decreased secretion became rapidly more marked as anesthesia was continued. During the first six hours after anesthesia the amount of urine increased, but it never reached the normal, and the kidneys regained their power of secreting water much faster than they could eliminate the nitrogenous constituents of the urine.

ANASTOMOSIS BETWEEN THE TWO TESTICLES.

Gatti⁷ experimented with dogs and found that by making an X-shaped incision through the capsula of the two testicles, the exposed surfaces formed when the four corners of the capsules were lifted up could be easily brought into apposition and held there. He advises the operation for traumatic lesions, but not for tuberculous ones, and says that all manipulations must be very gentle to avoid degenerative processes in the testicular tissues.

THERAPEUTIC USE OF TUBERCULIN.

Pardee⁸ used tuberculin in a series of cases of genito-urinary tuberculosis and studied its effects by periodical cystoscopic examinations of the bladder. He thinks that tuberculin is probably the best means at our disposal to-day for combating tuberculosis of the bladder, and that the best results are obtained in cases where the lesions are very circumscribed in character. One of his cases died, possibly, he thinks, from the use of the tuberculin.

TRANSVERSE NEPHROTOMY.

From experiments on dogs Berman⁹ claims that a longitudinal incision into the kidney leaves extensive infarctions and a considerable

formation of interstitial tissue behind it, while a transverse incision did not cause a disappearance of renal tissue to nearly the same extent.

UNUSUAL CASES.

Westphal's¹⁰ case was one of acute cystitis due to malaria, the parasite being demonstrated in the blood corpuscles contained in the urine sediment, and in the blood vessels of the bladder walls. The case was quickly alleviated by quinine.

This¹¹ is the report of a case of suppuration in both bladder and kidneys due to an actinomycosis which was not demonstrated until after death, when a histological examination of pieces of kidney tissue demonstrated many colonies of actinomycetes.

The case reported¹² is one of aneurism of the right renal artery due to the fall from a horse fourteen years before operation revealed the lesion. During this long interval there were periodical attacks of pain associated on three occasions with blood in the urine but no tumor was discovered until a few days before the operation which revealed through a loin incision a large tumor which was ruptured and 200 cc. of clots were emptied from it. Then the renal artery was found to be the seat of a tubulated aneurism and the vessel was clamped close to the aorta. Patient recovered. Four other cases are reported.

A URINE-PROOF DRESSING FOR SUPRAPUBIC FISTULÆ.

Colt¹³ describes his much needed appliance as one which is applied to the surface of the skin without entering the fistula, which drains without any leakage, which does not inconvenience the patient and which needs only occasional attention.

The apparatus consists of two parts which are described with great detail and which consists of a glass drain held in place by a disk of sheet rubber which in its turn is applied firmly to the skin around the fistula by a rubber solution made by dissolving pure rubber in naphtha. The mode of application is described with great care, and the writer believes the apparatus is absolutely efficient for its intended purpose.

PROCESS-VERBAUX.

Dr. P. Lebreton¹⁴ reports five cases of congenital stricture of the urethra. The ages of the patients were respectively six years, eleven years, thirteen years, sixteen years and nine years.

Certain observations of interest were made in connection with these cases. The chief symptom was enuresis in three of the patients. In the case of two of these three it was of nightly occurrence and had been present from early infancy. In the case of the third there was an irregularly

⁴ Gayet and Cavaillon: *Annales des Maladies des Organes Genito-Urinaires*, xxii, no. 5.

⁵ W. H. Thompson: *British Medical Journal*, March 25, 1905.

⁶ H. Pringle, R. C. S. Maunsell and S. Pringle: *British Medical Journal*, Sept. 9, 1905.

⁷ Gatti: *Annales des Maladies des Organes Genito-Urinaires*, xiv, p. 139.

⁸ Pardee: *Lancet*, London, Dec. 16, 1905.

⁹ Berman: *Deutsche Zeitschrift für Chirurgie*, p. 1268.

¹⁰ Westphal: *New Orleans Med. and Surg. Jour.*, July, 1905.

¹¹ Stanton: *Albany Medical Annals*, November, 1905.

¹² Skidern: *Journal of the American Medical Association*, Jan. 6, 1906.

¹³ Colt: *Lancet*, London, Nov. 4, 1905.

¹⁴ Mémoires et Discussions de la Neuvième Session de l'Association Française d'Urologie, p. 300, 1905, October.

intermittent occurrence, the interval being sometimes two or three weeks in which there was no nocturnal incontinence of urine, after which the condition would return for variable lengths of time.

The most interesting point to the writer of the report was that of crises of acute complete retention of urine lasting ten or twelve hours or even longer, recurring every three days or so, sometimes yielding to hot baths, sometimes requiring catheterization. This phenomenon was shown by another patient than the three already mentioned.

The fifth patient had diurnal and not the least nocturnal urinary incontinence. The enuresis came in this instance in connection with sudden laughter, or quick bodily movements, fright, etc.

Other but less well marked symptoms were: Diminution in size of stream, feeble expulsion of urine, dribbling after the act of urination, more or less painful urination. There is but one symptom which is distinctive from those of the acquired stricture of the adult, which is the urinary incontinence, and the writer points out that the possibility of its dependence upon congenital stricture should always be remembered.

With regard to the sites of the strictures, they are stated to have been in the perineal urethra in three of the cases, in one at the peno-scrotal angle, and in one somewhat posterior to this point.

The calibers of the constrictions were as follows: In the eldest patient, aged sixteen, only was there a stricture of wide caliber (No. 19). In the four other cases the calibers were No. 9 in two, No. 10 in one and No. 12 in one.

Despite the long continued obstruction to the outflow of the urine in these cases, it is noted that in none of the patients were the kidneys involved in any pathological change, so far as could be determined by the urinary examinations or the condition of the patients.

In one of the patients a residual urine of 100 cc. was found to exist. This patient had a typical overflow bladder.

The treatment employed in all the cases was that of gradual dilatation by bougies, and was markedly successful with all but one of the patients, causing, except in this case, an entire and rapid disappearance of the incontinence of urine and of other symptoms.

The patient having recurring attacks of retention, referred to above, proved to be an obstinate case with respect to cure. In fact, on several occasions attacks of acute retention followed immediately the use of the bougies, and although there were periods of amelioration lasting much longer than before the application of the treatment, the patient still had the attacks of retention more or less often when he was lost sight of, the time during which he had been treated being somewhat more than six months altogether. The stricture in this case replaced comparatively quickly. The author inclines to the belief that some of the strictures which are called congenital are in fact acquired during the first years of infancy.

PROSTATIC AND PERIPROSTATIC ABSCESS.

Alexander¹⁵ treats all forms of prostatic abscess by opening them into the prostatic urethra through a median perineal incision, whether pus be confined within the capsule or has extended outside of it, whether it is posterior to the triangular ligament or has extended into the perineum, or into the ischio-rectal fossa.

He is convinced that the treatment of these abscesses by this means is sound. They have healed under the use of this method more readily and with less danger to the patient than by any other way in his practice.

The technique of the operation is described and it is stated that the perineal wound always heals within three weeks and all the urine is passed through the urethra naturally before the end of the second week.

TREATMENT OF THE RENAL PELVIS BY LAVAGE IN CASES OF LITHEMIA, PYELITIS AND CERTAIN FORMS OF NEPHRITIS.

Johnson¹⁶ is of the opinion that lavage of the kidney is not only justifiable, but is a procedure, the importance of which is such as to demand recognition from the profession at large.

Mild cases of pyelitis may be treated by urotropin or salol and rest; for the severer grades, irrigation with the silver salts, boracic acid solutions through urethral catheter, once or twice weekly, is indicated. So also should cases of pyelonephritis be treated. Ureteritis heals under the use of lavage, employing at first mild soothing washes and later the more stimulating fluids.

Johnson goes still further and asserts that benefit is to be derived (in connection with the usual forms of treatment) from this form of lavage in certain cases of parenchymatous nephritis, and, in some degree, he claims that other forms of chronic nephritis also are improved by the treatment.

RESEARCHES ON THE FUNCTIONAL VALUE OF THE NEW CAPSULE FORMED AFTER DECAPSULATION OF THE KIDNEY.

J. H. Zaaier¹⁷ reports the results of further experiments with reference to this point with rabbits, thus: A new capsule is formed after both decapsulation and scarification of the kidneys of these animals, which insured better circulation for the organs than is the case with the normal kidney. By the end of from four to six weeks, both the arterial and venous anastomosis is more effectual in securing freedom of blood circulation than in the normal organ. There is usually more or less adhesion of the fibrous capsule in the cases of patients upon whom the operation of decapsulation is done. He states that the separation or cutting of such adhesions corresponds to the scarification which he makes in his experiments with the rabbits.

¹⁵ S. Alexander. American Surgical Journal, December, 1905.

¹⁶ F. M. Johnson. American Journal of Urology, October, 1905.

¹⁷ North and Georgia J. Med. & Surg., 1905, ix, p. 431.

Reports of Societies.

LIBRARY MEETING OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

MEDICAL SECTION.

HELD JAN. 3, 1906.

CHAIRMAN, R. C. CABOT, M.D. Secretary, E. A. LOCKE, M.D.

DR. R. C. CABOT: Before introducing the speakers, I should like to define some of the terms which we have to use in discussing the subject of the evening.

(a) *Proprietary*.—What are we to mean by a proprietary remedy? I understand it to be a remedy that some one *owns*.

(b) What are we made to mean by *patented medicines*? We must distinguish them from the so-called *patent medicines*. The composition of any patented medicine can be known by any person by sending to the United States Patent Office with a stamp for reply. The great majority of so-called patent medicines and nostrums are not patented but are protected by a trade name.

(c) The essential point about a *nostrum* is that it is a remedy the ingredients of which are not known. By the *nostrum* evil we mean the secret remedies the ingredients of which we do not know. I suppose there is no one in this audience who knows exactly just what remedies should be called proprietary medicines. There are some remedies which we all know about. There are some which hardly any of us know. There are a great many on the border line.

There are two essentials which we want to know about all medicines: (1) We want to know what are they composed of. (2) We also want to know that the houses which make them are reliable. We have to trust somebody in all cases. But we want to know who it is that we trust. We do not need to know exactly how the remedy is made. Very few of us could give the time to find out. But we do need to know the ingredients and the proportion of the ingredients and that the firm is a reliable firm.

I went to Portland, Ore., last summer and there I learned a great many things. I had always thought of the secret nostrum evil as a matter of certain misguided manufacturing houses or patent medicine concerns. It had not occurred to me that we, the physicians, were responsible for this. This lesson I had to learn from the forceful and timely address of the man whom I have now the pleasure of introducing to you, Dr. Frank Billings, of Chicago.

DR. FRANK BILLINGS, Chicago, read a paper entitled, THE MEDICAL PROFESSION AND THE MEDICAL JOURNALS IN RELATION TO NOSTRUMS.¹

And DR. FRANK G. WHEATLEY read a paper entitled: READY-MADE REMEDIES.²

DISCUSSION.

DR. DAVID W. CHEEVER: It would be idle, it seems to me, in these times, to try to oppose the advancement in chemistry and the skill of manufacturing which is so effectually American, and the force of co-operation by powerful syndicates who can combine all the forces of nature and of labor, of doing almost what they please; and if we endeavor to oppose such it would be, perhaps, questionable whether we were doing the best thing. But, on the other hand, we have to think of two things: first, the duty that we owe to our patients, and second, the duty that we owe to the public. We are called to visit the sick. We are expected in the first place to endeavor to find out what is the matter with

them. They look to us not only for an opinion, but for a remedy. It is for us to say whether that remedy shall be healthy, sound advice with regard to their habits or the condition of their case, or whether it shall be by giving medicine or drugs. If drugs are included in the duty we have to perform to this patient, then it is doubly our duty to know the character and qualities and the purities of those drugs.

When I was young in the profession it was the custom to pay much more attention to pharmacy and materia medica than now, and personally I had what I thought was always a useful privilege. I made up the medicines which I gave my patients so that I became somewhat familiar with drugs. I had not been long in practice before I was told by an older practitioner than I that I was foolish to concern myself with pharmacy. He said, "Let the apothecary attend to that. That is his business. We have nothing to do with the nature or the purity or the strength of drugs. We have only to prescribe and let them carry it out."

Now it has always seemed to me that prescriptions which are made up at the time and made by one reliable apothecary are more likely to be pure and fresh than those which have been made up for some time and have lost their value by being kept. So it seems to me we owe it to our patients in every sense to possess a good knowledge of the effects of drugs, to know enough not to put together incompatible things, to know enough to give drugs by themselves, and to give them in such a soft form that they can be speedily dissolved and not pass through the body whole as is sometimes the case.

A good apothecary who could make his living by following the prescriptions of physicians alone would be the best agent we could employ for the good of our patients. Now I conceive that the great danger in all these secret remedies, and I turn now especially to the duty we owe to the public, consists in the fact that the manufacturers do not say what they contain or that they lie about what they contain, and in the statement that they do not contain certain narcotics when, in fact, they do contain them. I remember going to a case where a child was dying of convulsions and seeing the mantelpiece covered with several bottles containing soothing syrups.

Now there are four or five drugs that are especially dangerous in secret preparations. They are opium, chloral, cocaine, coal-tar products, and last, but not least, alcohol. It is well-known among ourselves how often it happens that although we do our best to avoid it, we sometimes establish and regret the establishment of a morphine habit in our patients. Given first to allay pain its use is then followed up and becomes a habit.

Now, if a patient comes to us and we prescribe certain remedies which we say do not contain morphine and which do contain morphine, a habit may be readily engendered for which we are, in my judgment, directly responsible. In other words, we prescribe an unknown thing and it is certainly as much our fault as that of the manufacturer.

DR. J. C. WHITE: I desire to appear sincere in what I am about to say. I have been practising medicine just fifty years. In all that time I have never prescribed a single remedy outside the lists of the pharmacopoeia of this or other countries.

As has been said here repeatedly to-night, the success, of the manufacture and sale of secret nostrums and proprietary medicines lies in the advertisement in the daily and professional press. Without this information given thus to the laity and to our profession such a thing as the manufacture of these articles would be unknown. The same may be said of the

¹ See p. 231. ² See p. 235.

religious press, so-called, and also against literary journals in the form of weeklies, monthlies and quarterlies. Some of them are decent and clean. We have to handle a great weight of these advertisements every time we read many of these journals. Now it seems to me that we are responsible and seriously at fault in this matter.

I believe that we should withdraw our support from every medical journal in this country, both in the way of subscriptions and contributions, which admits notices of secret nostrums to its advertising columns. I believe that a few medical journals adopting that plan would meet with general support, and would not have to depend upon these advertisements for their pecuniary success.

There are certain other methods to which I think some attention should be given. We should keep agents of proprietary medicines from the house. There should be established in every place a pharmacy which would bind itself to have no dealings with such drugs whatever and to supply only pharmaceutical preparations. It would receive the support of at least 50% of the profession. I believe it would be a practical step in the direction at which we aim.

DR. R. C. CANNON: Dr. White's suggestion seems so important to me that I want to take a moment to repeat it in my own way. If a medical journal were to take the stand that it would exclude nostrum advertisements from its pages, that medical journal would appeal to the medical public and would receive its support. I believe the profession would respond and that those clubs, of which there are a great many in Boston, who now subscribe to journals, would see that it was their duty to support the journal. These advertisements are put in because the profession does not support the journal.

DR. F. C. SHATTUCK: I will simply bring up for one moment the history of the *Index Medicus*. There were no advertisements in that journal, and a sensitive profession might have supported it with zealous enthusiasm. It was of the utmost value to have in every library a copy and it was worth while for the profession to support that journal. In the first year the subscription price was high. Men paid fifty and one hundred dollars for a few years to help it along. After a while the price got down to five dollars. It was allowed to die and it has been revived only by the money that Mr. Carnegie has given. We are thus the recipients of his bounty.

DR. JOHN LOVETT MORSE: I am sure that we all appreciate the importance of this subject and realize our indebtedness to the Council of Pharmacy and Chemistry of the American Medical Association for the work which they are doing. I think we ought also to realize how much we owe to the *Ladies' Home Journal* and *Collier's Weekly* for bringing this subject before the public, as they reach the public in a way which the doctors do not. I wish to present the following resolutions to the Section:

1. Resolved, that the members of the Suffolk District Section of the Massachusetts Medical Society here present heartily approve of the action of the American Medical Association in establishing the Council of Pharmacy and Chemistry for the purpose of investigating and reporting upon non-official drugs, and cordially welcome the results of the work already done by that Council.

2. Resolved, that we give our hearty support to the educational campaign now being carried on by *Collier's Weekly*, by the *Ladies' Home Journal* and by the *Journal of the American Medical Association*, and that we warmly commend the action of these journals in exposing the humiliating subservience of the press,

lay and medical, to the mandates of the Proprietary Association of America, and for showing up the fraudulent use of sham testimonials and the loss of life due to the use of the products exploited by members of the Proprietary Association.

3. Resolved, that copies of these resolutions be sent to the journals mentioned in the foregoing resolutions.

DR. MORRIS PUTNEY: I was led to believe, when you asked me to take part in this discussion, particularly in view of that interesting pamphlet which was sent to each of us (the extract from *Collier's Weekly*), that the discussion would be rather along the lines of the so-called "patent medicines," the quack medicines proper, that are advertised in the daily press, rather than those secret nostrums which are advertised for the most part in the medical journals. What was described in that little pamphlet regarding the control of the press by patent medicine concerns shows a most astonishing state of affairs, one that must be a surprise to most people; but a still more astonishing state of affairs has been brought to light by another magazine, *The Ladies' Home Journal*, in an exposé of the methods by which those patented medicines are exploited. The investigations of Mr. Mark Sullivan, published in this magazine, deserve to be circulated along with those of *Collier's Weekly*.

The facts as brought to light show a very marked difference between the methods of exploitation employed to dispense the secret nostrums, commonly known as quack medicines, and those employed to dispense what more properly may be termed secret pharmaceutical preparations. The difference from a moral point of view is so great in principle that we should hesitate before we class the manufacturers of the two classes of medicine together.

In order to bring out this difference and emphasize the point I would make, I would like to briefly recall the published facts regarding the exploitation of quack medicines. These do not seem to be so well known among the male members, at least, of the profession, as are those connected with the control of the press. Briefly stated, one of the commonest methods in vogue for exploiting quack medicines and one of the worst evils is the treatment by correspondence. The facts which have lately been brought out would be amusing, were it not for the fraud and the swindling of the poor dupes which have resulted.

The method is this: The patent medicine concern invites correspondence, advertising to give advice free. In reply to these advertisements an enormous number of letters is received. For the purpose of replying to these letters and prescribing, a certain number, say, thirty, stock letters are written. These letters are devised so as to cover pretty nearly any group of symptoms of which a person may complain. When the morning's mail brings the letters of inquiry asking advice, each letter is marked with a number and turned over to a typewriter. The number corresponds to one of the stock letters, which the typewriter turns off as if a personal letter, and which ends with directions to take the secret nostrum.

Here are two frauds committed:—one against the state, which requires that every practising physician should be licensed, and yet these concerns practice medicine without a license; and, second, a fraud against the poor dupe who imagines that her case is really being diagnosed and treated. To these may be added the third fraud,—that a perfectly useless, fraudulent medicine is dispensed and money obtained under false pretenses. To me the greatest objection against patent medicine and this system of duping them is that the whole thing is a fraud from beginning

to end. It is a method of cheating and swindling, — a method of getting money under false pretences, and I see no reason why it should not be punished as other methods of swindling are punished.

How far the medicines in themselves do harm, I do not know, but according to a report of the Massachusetts State Board of Health, most of the so-called tonics and bitters contain alcohol, in amounts from 6% to 47%. They include the Sarsaparilla remedies, which contain 13% to 26%. It is said that the use of such medicines often leads to the alcoholic habit. Whether this is so, I do not know; but the statement has been made by Mr. Mark Sullivan, as a result of his investigation into the subject, that a patent medicine is financially valued according as to whether it is a "repeater." By a "repeater" is meant a medicine to which the user becomes habituated and which obliges him to continue its use. The habit being established, he is obliged to repeat his purchase, and hence the medicine is called a "repeater." It is said that a medicine of which a person would buy only one bottle is of little commercial value. A person must acquire such a habit that he cannot leave it off. This would seem to bear out the assertion that these medicines establish the alcoholic and the morphine habit.

Another indirect bad result of secret nostrum is that it has led to the miserable business of letter brokerage and violation of confidence. The letters received by the patent medicine firms acquire a market value, and though pledged as sacred confidences, are sold to letter brokers, who, in turn, sell them to quack doctors and other concerns for about five dollars a thousand. These letters are then sold or rented over and over again. One of these letter brokers claims to have over seven million letters.

The moral of this is as follows: Of course, a letter would not have a second, third and fourth hand value unless the dupes, like lambs in the stock market, return to the temptation over and over again. After trying one medicine they go to another and so on. As one broker said: "To be sure, they have all tried one remedy or more; but that is all right; they will keep on trying new remedies until they die. Buy or rent a few thousand of those letters from me, at a few dollars a thousand, and tackle them with a new proposition, — something new, with a new name, — jolly 'em along a little, and they'll all come up with the money for a new treatment." These letters are classified according to their complaints, and thus each broker can supply to any medicine concern the kind of letters that it may want. Thus, one broker has on his list: 55,000 female complaint letters, 44,000 bust developer letters, 40,000 women's regulator letters, 7,000 paralysis letters, 9,000 narcotic letters, 52,000 consumption letters, 3,000 cancer letters and even 65,000 deaf letters.

One of the worst features of all this secret nostrum business is the utter demoralization of the legislature, the press and, one might add, of public intelligence, that results from the business. The whole thing is an unmitigated fraud from beginning to end, and should be treated as such, just as any other swindling or bunco game is treated.

I have recalled all these facts, though already published, that we may maintain a balanced condition of mind in judging the demerits of another sort of nostrum, — the secret pharmaceutical preparations. A little consideration will show that these belong to a different class which, though it be condemned, must be judged on different grounds. These latter are intended to be, and I believe are, offered not to the necessarily ignorant public at large, the consumer,

but to the members of the medical profession, who are solicited to prescribe them according to their best judgment in suitable cases. The fact that the ingredients are kept secret may make it undesirable and inexpedient, as I sincerely believe it is, that such articles should be prescribed by the physician. The fact that some of them contain drugs, like acetanilid, which may be harmful and dangerous when the adviser is ignorant of what he is prescribing, as well as the fact that the patient is indirectly led to prescribe for himself and the druggist to dispense such drugs, make it undesirable that remedies of which the ingredients are a secret should be dispensed or sold at all; but surely, it is a question of expediency and not of morals. The business of dispensing quack medicines by quack concerns to the public is a question of lying and deception and obtaining money under false pretences, and should be dealt with by the law-making powers and the courts as such; the jail should be the remedy.

The one is a question of protection against a possible danger; the other of fraud. So far as a secret medicine belongs to the one class, its sale should be discouraged or forbidden. So far as it belongs to the other, its sale should be punished. For these reasons I cannot see my way to agree with the reader that all secret nostrums should be classed together and treated alike.

The reader has made much of the extravagant nonsensical claims made by the manufacturers for the curative value of their nostrums. But here again good judgment requires that we distinguish between those claims which are made to the medical profession, — educated physicians, — and the claims made for that other class of proprietary medicines of which I have spoken and which are made to the ignorant public. I cannot believe that any large part of the medical profession is as credulous, as ignorant, so poorly educated and such dupes as some would have us believe. I am sure it is not so in the East. If it be true, it is a terrible arraignment of our medical schools. The average practitioner, while believing the claims to be nonsense, is willing to try any new secret proprietary medicine as he will a new drug, with an incomprehensible chemical formula, supposed thereby to be known.

Nevertheless, it would have a wholesome effect upon the community if the prescribing, dispensing and sale of all secret nostrums could be prohibited. The ingredients of every medicine offered for sale should be made public. The true remedy for the present state of affairs lies, of course, with the legislature, but in the absence of legislation, the question is presented as to what is the most practical and expedient course to pursue. It is, to my mind, a difficult problem. Should the onus be placed entirely upon the medical journals which advertise the objectionable articles? It is to be remembered that if the journals advertise, the medical profession prescribes. This means that public medical opinion to-day is on the side of the manufacturers, and it is unlikely that against public opinion anything serious can be accomplished. Undoubtedly, something can be done by securing the co-operation of the medical journals in a reasonable elimination of the most objectionable advertisements. The best journals would probably be willing to co-operate to this extent, but, above all, the public opinion of the medical profession must be educated into the belief that it is unwise and inexpedient to prescribe secret nostrum remedies which may contain known dangerous drugs, and that their manufacture and sale have a demoralizing influence on both the profession and the public.

On the other hand, we must not forget that the profession owes much to the manufacturer. A large part of the profession, too busy to read medical literature, is kept posted in the recent advances in pharmacology and drug therapeutics by the literature freely distributed by the manufacturer. Is there anyone here who has not been indebted to this kind of literature for early knowledge regarding the therapeutic effect of new and valuable drugs?

Finally, though perhaps least, the manufacture of agreeable preparations, in place of the official tinctures, extracts, etc., of the pharmacopœia, has proved a boon to the patient. He will have them whether you prescribe them or not. *Verbum sapientibus sat.*

On the motion of Dr. George W. Gay, it was

Voted, that the chairman of this meeting appoint a committee of three to confer with the owners and editors of the BOSTON MEDICAL AND SURGICAL JOURNAL in regard to ways and means for eliminating certain nostrums from the JOURNAL'S advertising columns.

The meeting then adjourned.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

STATED MEETING, WEDNESDAY, DEC. 13, 1905, AT 8.30 P.M., THE PRESIDENT, DR. JAMES M. ANDERS, IN THE CHAIR.

ARTERIOSCLEROSIS AS A GENERAL DISEASE.

DR. ALFRED STENDEL called attention to the fact that there is at the present time a much wider conception of the rôle of arteriosclerosis as an independent pathological condition and as the underlying cause of various organic diseases than formerly.

Before the contributions of Gull and Sutton hardening of the vessels was considered merely in the light of a mechanical condition obstructing circulation to some extent and establishing conditions out of which a thrombotic obstruction of the circulation or hemorrhage might arise.

The modern study of arteriosclerosis would divide it into three stages:—(1) A primary stage difficult of recognition in its beginning and confusing to the clinician in his efforts to distinguish the part of the etiological factors from that of the arterial disease in the symptom-complex. (2) A middle period during which the arterial disease is easy to recognize but in which secondary organic changes have a rôle of variable importance. (3) A final stage of failure of circulation, organic failure and terminal infections.

In the first stage the direct evidence of sclerosis of the vessels is inconspicuous while certain general symptoms may be present and may be interpreted as the result of the causes that operate to produce a sclerosis of the vessels or, as in some part, the result of already beginning sclerosis. The difficulty of diagnosis lies in determining the respective parts in the symptom complex.

The speaker, in discussing the question of hypertension as a necessary condition in the early part of arteriosclerosis, insisted that his experience led him to believe that the very earliest change was one of loss of elasticity in the vessels and reduced pressure, and that when continued high pressure is met with this is significant of already established sclerosis. He was inclined, therefore, to question the existence of such a stage of presclerotic arteriosclerosis as had been described by certain writers, notably in England.

Among the symptoms of early arteriosclerosis he spoke of loss of vitality, decreased resistance to external conditions, and a tendency to slight infections, nervous depression, various organic derangements,

moderate circulatory disturbances. Taken as a whole, the symptoms of such cases might justify a separation of groups which could be appropriately designated the nutritional, neurasthenic and nervous groups. In the first the general loss of strength, vitality, etc., are the conspicuous features; in the second the vital depression and lowered nerve tone with beginning circulatory disturbance; in the last, attacks of migraine, profound muscular weakness after effort, evidence of disturbance of cerebral circulation, tendency to neuralgia and the like.

In the second period of the disease, when the thickening of the vessels is quite evident upon physical examination, there are also likely to be met with symptoms of organic disturbance such as albuminuria and other conditions of renal disease, palpitation, irregularity of action and other signs of myocardial disease and a variety of cerebral affections; less frequently pancreatic or hepatic diseases may originate from an arteriosclerosis. It is important in this period of the disease that the physician should realize the widespread character of the underlying pathological condition and not fix his attention too closely upon the organ conspicuously affected.

In the last stage when the vitality and particularly the circulation fails, terminal diseases and many other terminal infections, especially pulmonary and puerperal, are likely to occur. There is rarely any difficulty in recognizing the existence of the arterial disease and the part which it has played in bringing about the reduced state of vitality which acts as the predisposition to the terminal conditions.

The speaker suggested that there is a difference in kind as well as in time of occurrence between presclerotic arteriosclerosis, that is, the form which occurs in younger subjects, and the normal involutional senile type. Clinically, these cases distinguish themselves by their more rapid course and by the greater degree of embarrassment of the organs of the body, and, pathologically, in the speaker's experience, by a tendency to restriction to limited areas of the circulation. The more uniform and widespread the process, the more nearly is the senile type, with its gradually developing hardening, approached. When single vessels are seriously involved rapid obstruction of organic function is more likely to occur and the disease is more distinctly pathological.

THE RELATIONS BETWEEN CARDIOVASCULAR AND RENAL DISEASE AND ARTERIOSCLEROSIS.

DR. WILLIAM H. WELCH, of Baltimore, said there never can be an adequate understanding of arteriosclerosis unless the subject is approached from the anatomical, pathological and clinical standpoint. It is a disease attended with extraordinary perplexity and variability of symptoms and sometimes characterized by entire absence of symptoms.

That chronic Bright's disease may be the result of arteriosclerosis, Dr. Welch thinks there is no doubt, the main question being whether or not there are any peculiar anatomical or clinical characteristics of that variety of Bright's disease that distinguish it from the other types. The most common type of arteriosclerosis is of very little clinical importance in such diseases. It is the form that most frequently occurs in people and though it gives the impression of being an advanced chronic Bright's disease, it is not a disease, and gives very little evidence of disease, except an atrophy of the kidney giving rise to a few symptoms.

The discussion hinges, however, upon the question of systemic sclerosis and general arteriosclerosis. The variety of chronic disease that is characterized by degenerative changes in the arterial system, and

in the glomeruli with excessive changes in the arterioles. The main question is, whether or not the change is primary or secondary, and much importance attaches to the nature of the arterial disease in the kidneys in these cases. Friedman found hypertrophy of the elastic and muscular coats a condition which he regarded as degenerative in this stage in the kidney. This view, Dr. Welch said, had been regarded as correct in histological detail but in error in regard to the hyperplasia of the elastic tissue and, to some extent, of the muscular tissue. Dr. Welch thought that the changes in the vessels of the kidneys as well as the changes in the larger vessels elsewhere might be explained by hypertension. That a clear differentiation between primary Bright's disease and primary arteriosclerosis could be made was questioned. He regarded it as probable that all cases of Bright's disease operate primarily by causing changes in the peripheral arteries. In his judgment a large percentage of the cases of the ordinary chronic contracted kidneys not belonging to the arteriosclerotic kidneys on the one hand, or to the cases in which the arteriosclerosis is secondary to the Bright's disease, are the result of the same sort of cause that produces the arteriosclerosis.

Another way in which arteriosclerosis can produce disease of the kidneys was said to be through disease of the heart. In a case of arteriosclerosis with albuminuria and hypertrophy of the heart with failure of compensation, he does not believe it possible always to determine whether the case is one of true Bright's disease, secondary to arteriosclerosis, or the result of the failure of circulation and a moderate sclerosis.

In the relationship of arteriosclerosis to diseases of the heart, the most important question was considered to be that of the relationship to hypertrophy of the heart. With the knowledge that there may or may not be hypertrophy in cases of arteriosclerosis, and that it is a matter of the greatest difficulty to co-ordinate the changes in the arterial system with the heart lesions, the problem presented is not less difficult than that of the relationship of arteriosclerosis to Bright's disease. The hypertrophy of the heart, he said, must, of course, be a response to a demand for increased work. In arteriosclerosis, increased blood pressure is the exception rather than the rule, and there are cases of excessive arteriosclerosis without any increased blood pressure or high tension, and in those cases there is no evidence that the heart is called upon for extra work.

Why in some cases of arteriosclerosis there should be hypertrophy of the heart and not in others was regarded as a question of special interest. From the Leipzig clinic, he said, had come the statement that if the sclerosis attacked the large abdominal vessels, the vessels supplied by the splanchnic nerve, hypertrophy of the heart was liable to follow; while if the sclerosis affected mainly the arteries of the extremities, hypertrophy of the heart was not produced. Dr. Welch said that there were, however, occasional instances of marked hypertrophy of the heart without implication of the splanchnic vessels and now and then definite sclerosis of the splanchnic vessels without hypertrophy of the heart. He thought the question was wrapped up in the question of the cause of increased arterial tension in arteriosclerosis. A suggestion by one authority was that there is needed an increased arterial tension as in heart disease, which condition is not to be interfered with by the drugs of the clinician, the process being a true compensatory one as the hypertrophy of the heart is in valvular lesions.

The relation of arteriosclerosis to sclerosis of the coronary artery was also considered, and an instance

cited in which the sclerosis was practically limited to the coronary artery resulting in the sudden death of an otherwise perfectly healthy man. Autopsy showed nothing but a little atheromatous patch in one of the coronary arteries which had become the site of a thrombus. Again, the sclerosis may be a part of the general condition and associated with the well-known changes in the myocardium mainly in the form of fibro-myocarditis. He regards the fibroid patches the result of circulatory disturbance following atrophy and disappearance of muscular fibers and their substitution by a new growth of connective tissue. These fibroid patches, however, he does not consider responsible for the grave symptoms associated with coronary sclerosis, but that the disease of the arteries themselves causes the grave symptoms.

THE PATHOLOGY AND DIAGNOSIS OF MYOCARDIAL INFLAMMATIONS AND DEGENERATIONS.

DR. JUDSON DALAND discussed the relationship of myocarditis to myocardial degeneration, and is of the opinion that most of the common and important diseases of the myocardium are *degenerations* and not *inflammations*. Diseases of the heart muscle were subdivided into the inflammations and the degenerations, each of which may be acute or chronic, circumscribed or diffused. Clinically, he subdivided them into acute, chronic, systemic and mechanical, and stated that myocardial diseases may be considered clinically as insufficiency of the heart with or without valve murmur. Brief reference was made to the various forms of myocarditis, and he dwelt particularly upon the importance of chronic fibroid degeneration of the myocardium or cardio-fibrosis. He agrees with Huchard and others that this disease is a degeneration of the myocardium due to faulty nutrition, the result of diminished blood supply to the heart muscle caused by arteriosclerosis, and is opposed to the opinion that it is a chronic interstitial myocarditis.

Fatty degeneration is briefly considered, as well as fatty heart, which he subdivides into (1) simple increase in the epicardial fat, which may envelop the entire heart, or follow the grooves of the blood vessels on the surface of the heart, and (2) as an infiltration, the fat extending between the muscle fibers. He lays stress upon the clinical importance of the recognition of anemia in association with fatty heart and agrees with Romberg in the belief that cardiac insufficiency, in the obese, is caused by relative smallness and weakness of the heart muscle due to the disproportionate demands made upon the circulation by general corpulency.

Brief reference was made to brown atrophy and to amyloid, hyaline and calcareous degeneration of the heart.

The impossibility of diagnosing many cases of myocardial disease was emphasized and illustrated. He also stated that certain of these affections may be diagnosed with a fair degree of probability.

He stated that the symptoms of myocardial disease may be grouped under those of cardiac insufficiency, which symptoms are usually absent until dilatation occurs.

REMARKS ON CARDIOVASCULAR DISEASE, WITH REFERENCE TO TREATMENT.

DR. H. A. HARE said that in most cases of vascular disease the heart and kidneys suffer greatly, and that it may be impossible to determine in which of these portions of the body the primary and greatest change has taken place. He spoke particularly with reference to cases in which the vascular change was the dominant factor and in which there was an immoderate

degree of arterial tension without any renal lesions demonstrable by the ordinary symptoms or by urinary analysis, the heart sometimes presenting secondary signs of hypertrophy or of feebleness from fatigue or degeneration. Cases had been studied in association with Dr. de Schweinitz from the ophthalmological standpoint and with the aid of Dr. Stanton who has used the sphygmomanometer.

Three types of arterial tension were described: Those in which persistently high tension is due to spasm arising from prolonged nervous stress combined with certain abuses as to habits of life, food and drink. (2) Those in which tension is high, because in addition to spasm there is gradually developing or has already developed, fibroid change in the vessels. (3) Cases in which after a prolonged period of high tension there more or less suddenly develops persistent low tension in which the arteries are relaxed and distended so that they resemble veins to some degree in their caliber and compressibility. Cases illustrating these types were cited with the treatment instituted.

The important points brought out in the paper were as follows: As fibrosis in the peripheral vessels increases, the muscles of the larger vessels undergo hypertrophy as does that of the heart and it is quite as possible for vascular compensatory hypertrophy to rupture as for cardiac compensatory hypertrophy to do so. This rupture of vascular hypertrophy often gives the heart rest and permits it to recover from its fatigue and so life is saved. It is possible if the peripheral fibrosis is arrested for the vessels also to regain power and a great improvement to occur. The cardiac stimulants are not needed in these cases so much as rest and the skilful use of alternative and vascular sedatives. In cases of high tension due to fibrosis the nitrates can be of little value, and the iodides with rest and massage are useful.

The concluding portion of the paper dealt with the treatment of valvular and myocardial disease.

DISCUSSION.

Dr. J. C. Wilson opened the discussion. He was particularly impressed with the classification made by Dr. Stengel, especially with reference to the cases in which the familiar clinical symptoms of arteriosclerosis are not yet manifest. While he did not think Dr. Stengel had made it particularly easy for the clinician to recognize these symptoms under all circumstances, he thought the effort to recognize any condition of ill health occurring under circumstances of arterial change should be systematically practised. He thought that failure to recognize the fact that arteriosclerosis was not always a generalized process led to mistaking upon the existence of local manifestations.

He thought that perhaps in no group of cases outside the group of general infection was the nosological division of disease more important than in arteriosclerosis. The disposition to look upon the clinical conditions as the result of diseases of the heart, nervous system, kidneys, etc., when the symptoms were really manifestations of the general condition, he thought should be discouraged. He referred to a type of generalized arteriosclerosis observed in emigrants to this country not unlike senile arteriosclerosis in individuals living under more fortunate circumstances.

Dr. GEORGE L. DE SCHWEINITZ referred to his study of lesions in arteriosclerosis in relation to the use of the ophthalmoscope, and exhibited colored charts showing the eye fundus under these conditions. He considered the ophthalmoscope of aid in diagnosis, particularly in the preliminary stage, in prognosis, and in regard to the value of therapeutics. By the

ophthalmoscope he said were discernible changes in the course, caliber, size and breadth of the vessels and changes in transparency and transparency, so that the ordinary retinal vessel becomes white in color with an appearance as if striped with white, hiding whatever it covers.

When the changes in the course, caliber, size and breadth of the vessels give place to actual sclerotic change the overlying artery presses upon the underlying veins. In contrast to the changes observed in arteriosclerosis there were charts illustrating changes from advanced disease of the kidneys, from syphilitic processes in the eye, and from hemorrhages, and edema of the retina.

Dr. W. B. STANTON spoke with reference to the condition of the blood pressure in arteriosclerosis. In one of the cases mentioned by Dr. Hare the pressure had been the highest of any instance under his observation.

Dr. JOHN H. MUSSER said with reference to the classification of arteriosclerosis that in the early periods of the disease this could be only an etiological one; and to secure relief to the patient the etiological factor must be determined. States of the nervous system giving rise to heightened blood pressure must be considered as etiological factors. In the later periods of the disease classification depended largely upon the organ giving rise to dominating symptoms.

A case was cited which Dr. Musser thought offered great encouragement to all practitioners, — that of a patient with well defined arterial changes, extensive hypertension and secondary myocardial symptoms with eye and general vascular changes. The man was desperately ill, the factor of infection being a frontal sinus. Following operation and drainage there had been a general subsidence of all of the general arterial and myocardial symptoms, and, apparently, of all renal symptoms. At present the man is engaged in his profession. Dr. Musser did not agree with Dr. Welch that the finding of an atheromatous patch, as in the case mentioned by Dr. Welch, indicated the limitation of the sclerosis to the coronary artery, and believed that the process must be general.

Arythmia in association with arteriosclerosis, Dr. Musser said, was being looked upon not as an unfortunate factor, but rather as a conservative one and might occur unassociated with serious myocardial degeneration. He pointed out that if with every third or fourth beat of the heart there was cessation of one, or diminution of the force of one beat, there was given a little rest. He has had cases under his observation for many years showing such arythmia even more pronounced, which had been a relief to the patient rather than the opposite. In certain groups of cases he thought, therefore, that arythmia need not be considered a grave symptom.

Dr. S. S. COHEN said that in arteriosclerosis it was important to determine whether or not the symptoms were those of a degenerative process or of a reactive inflammatory one.

Dr. A. O. J. KELLY spoke upon the importance of recognizing arteriosclerosis in its early stages and thought special effort had been directed to this in late years. He thought this might be facilitated by observation of changes in the heart conditions in patients presenting no symptoms referable to the cardiovascular system. In connection with therapeutics he thought that in consideration of the power of different organs to adapt themselves to different conditions of physiology and of pathology, the therapeutic indications should vary in different cases. He said that if the heart was hypertrophied it need not necessarily be treated. He agreed with Dr. Hare that not always were needed cardiac stimulants, but sometimes a sedative was

THE NATIONAL ASSOCIATION FOR THE STUDY OF EPILEPSY AND THE CARE AND TREATMENT OF EPILEPTICS.

FIFTH ANNUAL MEETING, HELD IN NEW YORK, NOV. 29, 1905. THE PRESIDENT, DR. WILLIAM P. SPRATLING, OF SONYEA, N. Y., IN THE CHAIR.

EPILEPSY, THE STRANGEST DISEASE IN HUMAN HISTORY.

THE Presidential Address by DR. SPRATLING was presented under this title. The speaker stated that more than twenty-three centuries ago Hippocrates wrote an astonishingly accurate clinical description of the "sacred disease," as epilepsy was then frequently called. So much obscurity and mystery, so much that was indefinite, intangible and seemingly unsolvable had surrounded this extraordinary malady for thousands of years, that until recently we had apparently accepted the general decree of its almost complete hopelessness, so far as absolute and permanent cure was concerned, and did but little to offset this unfortunate and ancient conclusion. It was an indisputable sign of scientific progress that the time had forever gone by when we could speak simply of "epilepsy," and particularly when we could say, "This man has epilepsy; give him some bromide." The bromides had the power to palliate the severity of epileptic phenomena in selected cases, and even to arrest the attacks for long periods, but the speaker said he did not believe they possessed in themselves the inherent power to cure. While the intricate biologic problems that lay inherent in the cells of the brain, and that under their own or under immediate or remote associated stimuli were capable of inducing epileptic phenomena were still unsolved, more concise and widespread attention was being given to its etiology, and this was sure to bear fruit in time. That it was a disease of the brain, no one would probably deny. That it might have its origin in some cases in causes remote from the brain could not be controverted. That its causes were multifarious seemed easy of proof.

In discussing the work of the National Association for the Study of Epilepsy, Dr. Spratling said its objects were the following: 1. To promote the general welfare of sufferers from epilepsy. 2. To stimulate the study of the causes and the methods of cure of this disease. 3. To advocate the care of epileptics in institutions where they might receive a common school education, acquire trades and receive the best medical care. 4. To assist the various states in America in making proper provision for epileptics.

REPORTS ON PROGRESS IN THE PUBLIC CARE OF EPILEPTICS.

DR. H. M. WEEKS, the superintendent of the New Jersey State Village for Epileptics, located at Skillman, N. J., said that this village was established by an act of the legislature in 1898, and was formally opened for the reception of patients on Nov. 1 of that year. The village contained about 800 acres of land, nearly all of which was under cultivation. There were at the present time accommodations in the village for 300 patients.

DR. M. L. PERRY, the Superintendent of the Hospital for Epileptics at Parsons, Kan., which was opened for the reception of patients in October, 1903, said that the institution now had a population of 340, and a total capacity of 400. The number of patients was steadily increasing, and it would soon

become necessary to refuse applications for admission. There was little doubt, however, that the next legislature would provide for the construction of several additional buildings, and such other improvements as circumstances might demand. The first aim of the institution was to relieve the State hospitals for the insane of their epileptics, and the first patients that were received were transferred from those hospitals. Subsequent transfers had been made until at the present time the separation of those two classes was complete, and there was not an epileptic remaining in those hospitals. Experience had demonstrated the wisdom of that course, and it had proven beneficial alike to the insane and the epileptic. It had been the policy of the institution from the beginning to allow the patients as much individual freedom as possible, consistent with necessary discipline. All of the patients who were not confined to bed or who were not physical wrecks were required to do some work, and they had found this to be one of the most important and efficient adjuvants to treatment. The results obtained by treatment had varied greatly, but, on the whole, had been satisfactory. In some of the patients there had been no improvement whatever, but in a great many others there had been a marked diminution in the number of seizures, with decided improvement in their mental state and general physical health. There were several now under treatment who were considered to be on the road to recovery, and three had been discharged as cured. Of those three, all of whom were well marked cases of epilepsy, two had returned to their homes and work, and had resumed their places in society; the third had been lost sight of. These results might appear to some as trivial and unsatisfactory, but it should be borne in mind that thus far they had been dealing almost exclusively with cases of chronic epilepsy of long standing.

The President, DR. SPRATLING, said that at the Craig Colony for Epileptics at Sonyea, N. Y., they now had under observation and treatment 1,050 patients and 900 applications were on file from epileptics who could not be received for lack of room. The plant represented an investment of about \$900,000 and included 71 buildings, scattered over 2,000 acres. Additional buildings for the accommodation of 200 more patients had recently been contracted for.

DR. J. CLIFFORD SCOTT, the superintendent of the Pennsylvania Epileptic Hospital and Colony Farm at Oakbourne, Pa., said that this colony was supported largely by private contributions and that over 75% of the patients were on the free list. The colony was located on a farm of 110 acres, and had admitted, up to the present time, 161 patients, of whom 9 had died, 2 had been discharged cured, 67 improved and 32 unimproved. Fifty-one patients still remained in the institution. An effort was made to furnish employment that was adapted to the ability and natural tendency of the individual. Outdoor work was, of course, most beneficial, and the men were kept employed, excepting in inclement weather, on the farm, lawn, truck garden and about the buildings. Sufficient vegetables were raised in the garden to keep the table supplied most of the year. The women did most of the household and laundry work, besides having sewing and embroidery classes. Frequent entertainments were given, consisting of musical recitals, dramatic sketches, etc. The results of the colony treatment were most encouraging. The patients became more cheerful and more healthful physically, and without exception the number of their seizures were lessened.

HISTORY OF A CASE OF EPILEPSY OF FIFTY-TWO YEARS' DURATION, WITH 28,000 CONVULSIONS.

DR. MATTHEW WOODS, of Philadelphia: When this patient, a man about fifty-seven years old, first came under Dr. Woods' observation, the history obtained from him and from his mother, who had been his constant nurse, was that he had suffered from severe and frequent epileptic attacks for fifty-two years. The patient himself had kept a carefully tabulated record for many years of his *grand mal* seizures and he had estimated that during his life he had had over 28,000 severe attacks. During the first fifteen years of his infirmity he had consulted many physicians, and had tried numerous remedies without apparent benefit, so that all treatment had long ago been abandoned. Dr. Woods said it was the first chronic case he had ever seen where the patient did not come to him saturated with the bromides. The patient frequently had three or more attacks daily, and scarcely a day passed that he did not have at least one. The treatment advised by Dr. Woods was as follows: An almost exclusively vegetable diet was ordered, only a little meat being allowed, and that in the middle of the day. The patient's supper was to consist of tea or coffee, with bread and butter, and he was told to avoid eating pork, veal, cabbage, cooked tomatoes, pastry and other foods difficult of digestion or apt to excite fermentation. A pill containing 1 10 of a grain of capsicum, 1-30 of a grain of strychnine and 1/2 of a grain of the hydrocyanate of iron was ordered before each meal and at bedtime. Also a dram and a half of the bromide of potassium, divided into four doses, and each dose given with the utmost regularity at 8 and 12 o'clock in the forenoon and at 4 and 8 o'clock p.m. The bromide was ordered to be highly diluted with water, increasing the quantity of water with each dose by 1 oz. each week, until each dose was taken in 12 oz. of water. When the attacks were nocturnal, the last two daily doses should be united and taken at 9 p.m., in a pint of water. After two weeks of the above treatment, during which period the patient had two convulsions, he consented to an operation, under ether, for the relief of a phimosis of long standing. The prepuce was removed, together with three calculi and nearly an ounce of thickened, gelatinous, sub-preputial secretions. This added very much to his comfort and satisfaction, and made a profound impression upon him. Subsequent to the beginning of his treatment, this patient had six convulsions in all; four of these occurred while he temporarily stopped his medicine, and the other two while he was taking medicine, but prior to the operation. His death occurred three years and nine days after his last convulsion, at the age of sixty, and was due to valvular insufficiency.

CAN A COLONY BE MADE FOR THE CARE AND TREATMENT OF EPILEPTICS BE MADE SELF-SUSTAINING? IF SO, HOW?

DR. THOMAS C. FITZSIMMONS, of Wilkes-Barre, Pa., read a paper with this title. He stated that of the obstacles in the way of accomplishing substantial material aid for the epileptic, the most serious was the securing of sufficient money to properly house and care for all classes who suffered from this distressing malady. The question naturally arose, Could a colony of epileptics be made self-sustaining? In the speaker's opinion, it would require from seven to eight years to sufficiently develop a colony institution to place it on a self-sustaining basis. However, with a sufficient acreage, say an average of two acres of arable land to each colonist, and the wise and judicious selection of a soil which should be adapted to the

raising of crops most productive and profitable in that locality, he thought such a colony would become self-sustaining.

STATISTICS OF EPILEPTICS IN HAMPTON COUNTY, MASS.

DR. EVERETT FLOOD, of Palmer, Mass., presented this paper. He stated that in general it seemed to be true that the more familiar we became with a community, the more epileptic cases we found. The population of Hampton County was 175,003. The number of epileptic persons reported in the whole county was 224, a ratio of one to 783; adding 56 as the number of cases that were probably overlooked, it would give a total of 280, or a ratio of one to 550. These statistics were collected in 1900, and revised one year later.

DR. SPRATLING said he could corroborate the statement made by Dr. Flood that statistics of the number of cases of epilepsy were misleading, and that many cases remained concealed. The more that was done for the epileptic, the more that he felt was being done for him, the greater the number of cases that would come to light.

DR. EDWIN A. DOWNS, of Hartford, Conn., said that the ratio of epileptics to the general population given by Dr. Flood corresponded very closely to the figures he had obtained in Connecticut. The difficulty of securing accurate statistics on this point was increased by the fact that many so-called cases of masked epilepsy went unrecognized.

ANNOUNCEMENT OF A \$300 PRIZE FOR THE BEST ESSAY ON THE ETIOLOGY OF EPILEPSY.

The President, DR. SPRATLING, announced that through the generosity of a person who was warmly interested in the work of the National Association for the Study of Epilepsy and the Care and Treatment of Epileptics, the Association was authorized to offer a prize of \$300 for the best essay on the etiology of epilepsy. The conditions of the award were as follows: All essays submitted must be in English, written in a clear, legible hand or on the typewriter, on one side of the paper only, and must not contain more than 15,000 words. They must be in the possession of Dr. W. P. Spratling, at Sonoma, N. Y., not later than Sept. 1, 1906. The name of the person submitting the essay must not appear on the same, but be put in a sealed envelope on which a motto is written, and which should also appear at the top of the first page of the essay.

All essays received will be placed in the hands of three physicians to determine their merit. Two of these physicians will be members of this Association, the third a member of the American Neurological Association.

Announcement of the award will be made at the November, 1906, meeting of the Association, and the successful essay becomes the property of the Association.

The Association will not feel bound to award the prize should no essay submitted be deemed of sufficient value to merit it. Original research work into the etiology of epilepsy will be the leading factor in having the award.

Further information about the matter may be obtained from Dr. W. P. Spratling, at the Craig Colony for Epileptics, Sonoma, Livingston County, N. Y.

THE USE OF A BROMIDE FERRALUMINATE WATER IN THE TREATMENT OF EPILEPSY.

DR. G. KIRBY CANTLER, of Sonoma, N. Y., presented this paper. He said that while the use of the bromides in the treatment of epilepsy had long been recognized

as a valuable adjunct to our materia medica, the many abuses of the drug were well known, as well as their harmful effects. Among these he mentioned chronic bromism, characterized by a loss of appetite, a nauseous, fetid breath, chronic gastritis, constipation, muscular weakness, frontal headache, a sense of mental weakness, failure of memory, congestion of the uvula and fauces, inactivity of the excretory organs and hallucinations. Also various skin eruptions. In order to remove or at least minimize the injurious effects of the drug, Dr. Collier devised the method of administering the bromides with a saline purgative, in order to promote the elimination of the bromine, and to disguise the taste of the two, so that the dosage could be more easily regulated. The method devised was as follows: A concentrated solution of the bromides, the sodium, potassium, calcium and ammonium salts, was made with the addition of magnesium sulphate. Epsom salts was selected on account of its prompt action without giving rise to any nausea or griping, and its diuretic property. The bromides were used in the strength of, sodium bromide, 6 parts; potassium bromide, 3 parts; calcium bromide, 2 parts; ammonium bromide, 1 part; and magnesium sulphate, 8 parts. The bromides and magnesium sulphate in the above proportions were added to a quantity of water sufficient to yield 128 volumes, which gave a concentrated solution. The object in view was to have this so-called bromide water take the place of the ordinary drinking water at meals, 2 oz. of the concentrated solution being added to one quart of water, preferably iced, and the patient given one glass, equal, approximately, to one-half pint at each meal, or oftener, if necessary. It was thought desirable to make this a ferrated water, and to that end one fluid ounce of the tincture ferri-citro-chloroform was added to the 128 parts of the concentrated solution. The use of the bromides in this form was begun in June, 1905, being given to patients who had previously been taking large amounts of the drug, and the method had resulted in a distinct lessening of the number of seizures, and a marked improvement in the general condition of the patients.

DR. JAMES W. WHEERRY, of Danville, N. Y., said that while all recognized the value of the bromides in epilepsy, the harm that frequently followed their use could not be lost sight of. If the combination proposed by Dr. Collier would retain the good qualities of the bromides, and eliminate their injurious ones, it would prove a boon not only to the physician, but to the patient.

DR. SPRATLING said that during his fifteen years' experience with 2,500 cases of epilepsy, he had never yet given the bromides with the expectation that they would ever cure the disease. He took the stand that they had a place in the treatment of epilepsy, but it was wholly secondary to any good they could do in the way of a cure. He had yet to see a genuine case of epilepsy cured by the bromides alone; on the other hand, he had seen an enormous amount of harm come from their use.

DR. M. L. PERRY, of Parsons, Kan., said that perhaps a partial explanation of the good results obtained by Dr. Collier with his bromide-ferrated-aperient water could be traced to the eliminative properties possessed by the combination, and the consequent improvement in the patient's general health. The great difficulty was to get the sedative effect of the bromide without its injurious effects upon the patient's general health and mentality.

DR. MAX MAILHOUSE, of New Haven, Conn., raised the query as to how much of the benefit that followed the use of the combination bromide mixture was due

to the treatment itself, and how much to the other factors that formed a part of the colony treatment. He was inclined to agree with Dr. Perry that the favorable results were, to a certain extent, at least, attributable to the eliminative effects of taking such large quantities of fluid, perhaps by helping to eliminate toxins that were absorbed from the digestive tract.

DR. EVERETT FLOOD, of Palmer, Mass., said that when the sedative effect of the bromide was first discovered, and there was great need for a drug of that character, it was very likely that excessive doses were administered. The time had now come when we should be very careful about the dose and the method of administration, and we knew that a small dose would often answer all the purposes of a large one. He was firmly of the opinion that the drug should be given in smaller doses and at longer intervals. He believed that the bromides still had a place in the treatment of epilepsy, and that we should oppose their misuse rather than their use.

DR. COLLIER, in closing, said the dose of the bromide salts in the mixture was about 11 gr. to the half pint of water; the patient received 11 gr. of the bromides daily, whereas the other patients were receiving from 30 to 100 gr. daily in the ordinary form. The demand for salines and cathartics was also very much lessened while they were taking this mixture.

TRAUMATIC PSYCHIC EPILEPSY.

DR. PEARCE BAILEY, of New York City, read this paper. He stated that focal, or Jacksonian epilepsy, resulting from injuries to the motor cortex, was a clinical condition, thoroughly established, of unmistakable identity, and in which the relationship of cause and effect was incontestable. Traumatic general epilepsy, though its individuality was less well assured, was, nevertheless, recognized by most competent authorities as a legitimate and direct outcome of trauma to the head. Traumatic Jacksonian epilepsy was rarely accompanied by any purely psychic manifestations. General epilepsy from trauma, on the other hand, was not infrequently associated with psychic phenomena. When associated with recurring convulsive seizures there was no difficulty in recognizing the purely mental manifestations as part and parcel with the epilepsy. When, however, all convulsive phenomena were absent, the diagnosis of epilepsy became a much more uncertain matter; and, indeed, it was questionable whether the diagnosis of epilepsy from psychic symptoms alone was justifiable. Neither the periodicity, the amnesias, the automatisms, the periods of depression, nor the myoclonia were in themselves characteristic of epilepsy and of nothing else. This became particularly apparent when observing the occasional mental effects of head injuries. After the initial unconsciousness had passed off, some patients continued to present mental symptoms. They were of a delirious, confusional and especially impulsive character. They might be continuous, or, more frequently, periodic, with normal intervals. The impulsiveness of these patients closely resembled that in the epileptic psychoses. The patient at one moment might talk rationally and coherently; at the next be irrational, irresponsible and violent.

Dr. Bailey then reported in detail a case of traumatic psychic epilepsy, and said the only point he wished to raise was to call attention to the resemblance between psychoses resulting from brain injuries and epileptic states, and to express his own opinion that a differential diagnosis between the two conditions, if they were individual, was often impossible.

DR. M. ALLEN STARR, of New York City, said that several years ago he saw a boy of sixteen, who four years prior to that age had sustained a severe fall on the head. It was not supposed, however, that the skull had been fractured. Subsequent to the fall he developed attacks of a psychic character, which occurred at intervals of from one to two months up to the time he was operated on. The attacks occurred suddenly, when, without any apparent provocation, the boy would fall into an extreme rage, and would attack any one near him. During such attacks he had injured several members of his family, and he had been unable to keep any position. The attacks would last from thirty minutes to an hour, and when they had passed off the patient apparently had no recollection of them whatever. He was brought to the Presbyterian Hospital, where Dr. A. J. McCosh found a scar in the parietal region over the superior parietal convolution. As pressure there was painful, and as the boy complained of a good deal of spontaneous pain in that locality, it was decided to trephine at that point. Upon opening the skull, there were evidences that there had been a slight linear fracture with great thickening of the underlying dura, and underneath this there was found an extraordinary collection of veins, about an inch and a half in diameter. It was a typical angioma, made up of a number of little blue veins which resembled a cluster of small worms. By carefully tying off all the branches leading into this mass, it was isolated and then removed. This resulted in very slight injury to the parietal cortex in that region, but in spite of the fact it was sufficient to produce a temporary ataxia of the corresponding hand, without any accompanying paralysis. The boy otherwise made a perfect recovery, and from that time on was relieved of these periodical attacks of rage.

ROBGRAPH OF VARIOUS TYPES OF EPILEPTIC SEIZURES.

DR. WILLIAM P. SPRATLING, of Sonoma, N. Y., and WALTER G. CHASE, of Boston, Mass. (See BOSTON MEDICAL AND SURGICAL JOURNAL, p. 571, 1905.) The following officers were elected for the ensuing year: President, Dr. Max Mailhouse, of New Haven, Conn.; First Vice-President, Dr. Everett Flood, of Palmer, Mass.; Second Vice-President Dr. William F. Drewry, of Petersburg, Va.; Secretary and Treasurer, Dr. James W. Wherry, of Danville, N. Y.

Recent Literature.

The National Standard Dispensary.—Containing the Natural History, Chemistry, Pharmacology, Actions and Uses of Medicine including those recognized in the Pharmacopœias of the United States, Great Britain, and Germany, with numerous references to other Pharmacopœias. In accordance with the eighth decennial revision of the United States Pharmacopœia, 1905. By HENRIK ARVID HALL, B.Sc., M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. CHARLES CASPARI, JR., Ph.D., Ph.D., Professor of Theoretical and Applied Pharmacy in the Maryland College of Pharmacy, Baltimore. HENRY H. RISBY, M.D., Professor of Botany and Materia Medica in the College of Pharmacy of the City of New York. JOSEPH F. GRIFFIN, Ph.D., Chemist, New York State Department of Agriculture.

EDWARD KREMLER, Ph.D., Professor of Chemistry, University of Wisconsin; and DANIEL BASE, Ph.D., Professor of Inorganic and Analytical Chemistry, University of Maryland. Illustrated Philadelphia and New York: Lea Brothers & Co. 1905.

This new edition *Standard Dispensary* succeeds the *National Dispensary* of Stillé and Maisch. In addition to a consideration of the subjects contained in the new United States Pharmacopœia, it covers also the ground of unofficial drugs and preparations now generally in use. This has necessitated a consideration of many new subjects. Minor drugs, as well as those of recognized importance, are discussed in such a manner as to leave the reader with a definite knowledge of their relative value. In connection with the action and uses of drugs, an attempt has been made to epitomize modern therapeutic procedures, and a therapeutical index has been added, which should prove of much value to the clinician. The volume consists of 1,860 pages of somewhat small type. It is illustrated in the way usual to such treatises, and naturally contains a mass of information which is universally required by the student or practitioner of medicine or pharmacy. The men who have united to produce this volume assure its trustworthiness.

Lectures on Clinical Psychiatry. By DR. EMIL KRAEPELIN, Professor of Psychiatry in the University of Munich. Authorized translation from the second German edition, pp. 345. Revised and edited by THOMAS JOHNSTON, M.D., Edin., M.R.C.P., London, etc. New York: William Wood & Co. 1906.

The appearance within two years of a second edition of this admirable work of Kraepelin shows plainly the instant and general recognition of its worth. The changes in this edition are few but valuable. They consist mainly of two new lectures (Congenital States of Disease and Morbid Criminals and Vagabonds), and the substitution of more appropriate examples for some used in the first edition. We can add nothing but reiteration of its importance and value to our more extended notice of the first edition of this admirable textbook.

A Textbook of Medical and Pharmaceutical Chemistry. By LEWIS H. BAILEY, B.S., M.D., Ph.D., Professor of Chemistry, Toxicology and Pediatrics in Long Island College Hospital, late Dean and Professor of Organic Chemistry in the Brooklyn College of Pharmacy, etc. Sixth revised edition. Philadelphia: P. Blakiston's Son & Co. 1906.

This edition closely resembles the preceding one. There have been a few changes in the one, particularly in the arrangement of topics, and a number of analytical processes have been left out because this is not a laboratory text-book. The book is essentially a descriptive, general, and inorganic chemistry, although considerable space is devoted to physiological chemistry.

THE BOSTON
Medical and Surgical Journal.

THURSDAY, MARCH 1, 1906.

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THE PURGATION OF THERAPEUTICS.

In a paper on "The Medical Profession and the Medical Journals in Relation to Nostrums," read before the Medical Section of the Suffolk District Medical Society, and published in this week's issue of the JOURNAL, Dr. Frank Billings makes this statement: "Primarily the medical profession is to blame for the present extensive use of proprietary medicines, the majority of which are nostrums." The discussion of the subject which follows this initial statement brings with it an arraignment of the medical profession at large, which we are inclined to think the facts do not wholly justify. The entire discussion, now so prominently before the medical profession, and the laity as well, naturally has for its object the elimination of certain abuses which have grown up during the past few years. That these abuses exist no one who has looked into the subject will be inclined to deny; that the best means of preventing them is to make a violent general attack is open to question. It is well, so far as possible, to recognize clearly the abuses and also to do justice to those who are honestly attempting to forward the cause of therapeutics.

Certain points must at once be admitted. Nostrums are bad and should not receive the encouragement of the medical profession; advertising methods are justly open to criticism; they are often extravagant, exaggerated and inexact. This is a natural tendency of all advertising, but no doubt is worthy of special condemnation in matters relating to medical treatment. Furthermore, the attempt to foist unworthy preparations upon the unwary medical profession should be combated. The remedy for this lies with the physicians themselves. On the other hand,

certain demands may rightly be made by the medical profession to which we are inclined to think reputable manufacturing chemists will assent. The essential element in the improvement of the situation is publicity. We should know what we are prescribing, and we should expect advertisers to accede to this reasonable and rational demand.

The contention of which we have heard much of late that the Pharmacopœia contains all the drugs and preparations necessary for the treatment of the sick is a specious argument, and one which, if strictly followed, would retard therapeutic progress. The revisions of the Pharmacopœia are infrequent. Extra-pharmacopœial drugs must be tried if their efficiency is to be determined before receiving recognition in the Pharmacopœia. By this means our rational therapeutics have grown. Many of our most useful drugs, now official, have gone through this period of probation. These general facts, we take it, no reasonable person will dispute. It becomes, therefore, a very questionable indication of the liberality of a physician's therapeutic attitude when he states that he has confined his drug-giving to the preparations contained in the Pharmacopœia. In our opinion it is neither desirable nor possible to limit ourselves in this way. If we do not so limit ourselves, it becomes necessary for the medical profession at large to co-operate with the manufacturing chemists in the enlargement of the scope of our therapeutic efforts. There can be no question that the manufacturing chemists have been of service to the general cause of practical therapeutics. They have co-operated with the medical profession in modifying official drugs to meet certain indications, and in rendering medicine palatable by methods known and acknowledged to be useful by every one. It is absurd to suppose that the physician of the future is going to confine himself to the writing of prescriptions when the ingredients he wishes are already combined by responsible persons in highly palatable and acceptable form. There is reason to believe that the prescription put up by the neighboring apothecary is not always what it purports to be. The remedy, therefore, for the present unfortunate condition of affairs is not wholesale denunciation, but a completer co-operation between physicians and manufacturers, to the end that the manufacturers will be as unwilling to overstep the bounds of propriety as the physician. There is sufficient evidence at hand to show that such a point of view is not chimerical.

Our attitude toward frauds and impositions must be uncompromising, but in this attitude we should take every care not to do an injustice to those who are trying, if they were permitted, to work in harmony with the medical profession and its ideals. The present situation has not been the growth of a day. It is evident that the reformation cannot be accomplished at once. It is a question demanding most careful consideration from every point of view, and if this be given it with calmness of mind, we are optimistic enough to believe that the manifest evils of the present will surely be modified and gradually largely eliminated. The pendulum has swung too far in one direction, and pendulums have the habit of swinging an equal distance in the other.

TREATMENT OF PNEUMONIA BY FRESH AIR.

THE daily press has given wide publicity to a method of treatment of pneumonia by fresh air which is claimed to be new. This matter has been brought forward through articles appearing in medical journals drawing attention to the value and efficiency of liberal fresh air in the care of the disease. In our issue of last week we published a paper from the pen of Dr. W. P. Northrup, of New York, who insists upon fresh, cold air as a rational method of meeting the indications. That there is much reason in this point of view is not to be questioned. It must, however, be recognized that practitioners for many years have employed fresh air in this disease as in others and have insisted that the windows of the sick room should be freely opened, with an open fire where possible. The peculiar efficiency, which is popularly supposed to reside in a tent, we are inclined to think has been somewhat exaggerated. The same results may, no doubt, be attained in a properly aired and ventilated room. The tendency, however, to go to extremes, in this matter as in others, is justified by the extreme difficulty of influencing conservatives toward progress. This present agitation regarding the treatment of pneumonia will prove highly salutary in demonstrating the fact that rational therapeutics may be applied to pneumonia as to tuberculosis and many other diseases, thereby removing prejudice which always stands in the way of progress. Although as yet experience is limited, we have no doubt as cases multiply it will be found that they do as well or better with the liberal supply of fresh air which is now being advocated.

HOSPITAL CARS.

THE refinements of modern railway travel have made necessary libraries and other appurtenances of home life. It is, therefore, a natural development that provision should be made for the care of the sick, and this has been undertaken by the Southern Pacific Railroad. This road has recently completed in San Francisco a car arranged primarily for hospital purposes, but so constructed that it may be converted into an ordinary official or private car. A recent number of the *Railway Age* gives the details of the construction of this car, which is apparently admirably equipped to meet not only the exigencies of illness, but also the comforts of travel. It is planned that when the car is not in use it is to be held at the company's hospital near West Oakland, with a trained nurse and cook, who are to see that it is always in condition for emergency service. Owing to the long distances between stations and hospitals on the Southern Pacific system and consequent delay in getting patients to a hospital, it is proposed to use a special engine to take necessary doctors and hospital equipment to the scene of a wreck. In addition to this car, the road also proposes to build others, arranged and equipped in a similar manner but less elaborately. As a further protection of its patrons, the company is to establish a number of emergency hospitals at remote places along the line. The relative frequency of serious railway accidents and the disabling character of the injuries usually produced render such provisions as the foregoing altogether desirable. No doubt lives might be saved and much suffering obviated were proper facilities immediately at hand to care for the wounded. The usual experience is that medical and surgical aid is not forthcoming and the appliances necessary, even for first aid are not ready at hand. The plan, therefore, of maintaining hospital cars is to be highly commended and should be generally adopted by railroads, particularly in the United States where distances are great and hospital facilities imperfect.

MEDICAL NOTES.

APPOINTMENT OF PROFESSOR VON BERGMANN.

It is announced that Prof. Ernst von Bergmann has been given a life appointment by Emperor William to the upper house of the German Parliament. An honor of the character has never before been conferred upon a member of the medical profession.

QUEEN AMELIE, OF PORTUGAL, HONORARY PRESIDENT. — Queen Amelie, of Portugal, who is a Doctor of Medicine, will be honorary president of the Fifteenth International Medical Congress which convenes in Lisbon on April 19.

THE PHILIPPINE JOURNAL OF SCIENCE. — The first number of the *Philippine Journal of Science*, to which we have already made reference, appears in attractive form and with weighty contents. The general scope of the journal is wide and will publish papers in the domain of several allied sciences. The publication is a continuation of the previous publications of the Bureau of Government Laboratories. This first number contains five articles bearing wholly upon the problems of the tropics. If one may judge from the character of the printing and the admirable half-tone reproductions, the progress of the printer's art in the Philippines has been phenomenal.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, Feb. 28, 1906, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 41, scarlatina 13, typhoid fever 10, measles 204, tuberculosis 76, smallpox 0.

The death-rate of the reported deaths for the week ending Feb. 28, 1906, was 21.29.

BOSTON MORTALITY STATISTICS. — The total number of deaths reported to the Board of Health for the week ending Saturday, Feb. 24, 1906, was 261, against 217 the corresponding week of last year, showing an increase of 44 deaths, and making the death-rate for the week 22.87. Of this number 138 were males and 123 were females; 256 were white and 5 colored; 149 were born in the United States, 106 in foreign countries and 6 unknown; 41 were of American parentage, 180 of foreign parentage and 40 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 59 cases and 6 deaths; scarlatina, 13 cases and no deaths; typhoid fever, 45 cases and 34 deaths; measles, 191 cases and 2 deaths; tuberculosis, 45 cases and 34 deaths; smallpox, no cases and no deaths. The deaths from pneumonia were 50, whooping cough 3, heart disease 26, bronchitis 7 and marasmus 5. There were 11 deaths from violent causes. The number of children who died under one year was 41; the number under five years, 63. The number of persons who died over sixty years of age was 63. The deaths in public institutions were 72.

There 3 cases and 1 death reported from cerebrospinal meningitis during the week.

REGULATION OF MEDICINES. — A hearing was held Feb. 27 before the Public Health Committee of the Massachusetts Legislature on several bills which had been presented for the regulation of the sale of various patent and proprietary medicines.

APPOINTMENT OF DR. DAVID D. SCANNELL. — Dr. David D. Scannell has been appointed by Mayor Fitzgerald a member of the Board of Pauper Institutions Trustees to succeed the late Dr. J. B. Cherry. It is peculiarly fitting that a physician should be appointed to this position, inasmuch as the hospital is coming to take a more and more prominent position in relation to the institution at large.

NEW YORK.

MEDICAL EDUCATION IN JAPAN. — On the evening of Feb. 15, Baron Takaki delivered an address on Medical Education in Japan, before the New York Academy of Medicine, and afterwards a reception to him was given by the Fellows of the Academy.

FUND FOR MONTEFIORE HOSPITAL. — The trustees of the Montefiore Hospital and Home for Chronic Invalids have established a fund of \$25,000, the interest on which is to be devoted to the assistance of those who have been cured or permanently relieved in the institution. The patients of the country branch, the Bedford Sanitarium for Consumptives, are included among the beneficiaries of this fund.

GERMAN CHARITY BALL. — The annual German Charity ball, which was given in January, this year, netted the sum of \$13,000, and this has just been divided among nine institutions. The German Hospital and Dispensary receives the largest amount, \$2,300, and each of the others, \$1,450. Among the beneficiaries are St. Mark's Hospital, the West Side German Dispensary and St. Francis' Hospital.

Miscellany.

PROFESSOR MINOT CONCERNING OLD AGE.

In a brilliant address not wholly innocent of paradoxes, Dr. Charles Sedgwick Minot of Harvard told the Academicians of Medicine that old age "begins before birth." This explains, perhaps, the solemn and preterpreadamite gravity

of certain babies. But, however comforting it may look to know that one's old age begins before he begins, there is small consolation in these refinements. Not the beginning need concern anybody. It is the end that is feared, the hour of fading strength, the "hour when the keepers of the house shall tremble, and the strong men shall bow themselves." Old age and death are as natural as life, but they are a part which it takes a great deal of religious philosophy and quotations from the poets to adorn.

As if old age could not come fast enough, various doctors are now trying to show that it begins earlier than it used to. Dr. Minot asserts that "permanent fatigue" starts at about forty. Everybody knows plenty of persons who were born permanently fatigued; probably their permanent fatigue began before they did. "Permanent fatigue" as a mental characteristic has no necessary connection with old age.

Let the fathers and mothers of venerable monthlings and yearlings read and perpend these words of Dr. Minot's:

"The percentage of growth is greatest in the first month after birth, and steadily decreases from then. In other words, man ages faster in the first year of his birth than ever after. A child in its first year learns more than it ever acquires in an after year. The things we learn afterward come harder each year, until the time comes when man can acquire no more and his power of originating ceases. His usefulness, while not altogether done, is on the wane."

After all, there is healing in this. The child is older than his father. Merlin must have been a real character. And everybody over twelve months is a dullard and on the wane.

With the progress of the suns will not authority go with wisdom? The yearlings are the quickest, the least degenerate. Theirs be the sceptre and authority.

Dr. Minot says that the lower orders of animal life never die save by accident. Curiously enough, among the lower orders of human life, the savage and primitive folk it is or was believed that nobody died save by the design and witchcraft of an enemy. *New York Sun.*

Musser, Philadelphia; Dr. Frank Billings, Chicago; Dr. W. W. Keen, Philadelphia; Dr. Nicolas Senn, Chicago, Dr. F. C. Shattuck, Boston; Dr. R. Matas, New Orleans; Dr. Albert Vander Veer, Albany. Dr. Walter G. Chase, Boston; Dr. E. DeWitt Connell, Portland, Ore.; Dr. Ramon Gutierrez, New York City.

At the Congress an orator will represent each country in delivering an address or oration before the assembled sections of the meeting. Dr. Nicolas Senn will represent this country as orator, and will deliver an address on "The International Study of Carcinoma."

Information regarding the scientific part of the Congress can be obtained by addressing the secretary of the American Committee. Information concerning transportation to and from the Congress can be obtained from Dr. Chas. Wood Fassett, St. Joseph, Mo., who is in charge of the American party.

RESOLUTIONS ON THE DEATH OF DR. JOHN I. FRENCH.

By the death of Dr. John I. French, of Winchester, the Middlesex East District of the Massachusetts Medical Society has to mourn for the loss of one who was an active worker for the advancement of medical science, and who was deeply interested in the welfare of the society and of its members. Taken from us when he was approaching that period in his life when its activities should be at their best, the announcement of his death came as a sudden blow to all but his more intimate friends. In him we have lost a man of moral courage, a kind and sympathetic friend and a genial companion.

Be it resolved: That the Middlesex East District of the Massachusetts Medical Society express its heartfelt sympathy to the family of the late Dr. John I. French.

C. W. HARLOW, M.D.,
Secretary.

Correspondence.

INTERNATIONAL MEDICAL CONGRESS.

Mr. Editor. Kindly announce through your columns that the organization of the American party to the Congress is nearly complete and hotel reservations in Lisbon will be closed in a few days. Those who contemplate joining the party should send in their names within the next ten days in order to insure good hotel reservations. Those who are familiar with hotel conditions in Portugal will appreciate the importance of early action.

For the information of your readers who have not received the regular *Traveler*, remember that the American party will sail from New York on April 7 on the North German Lloyd steamship, *Koenig Albert*. The rate of sailing and expenses will be \$300 per individual. Money due to be paid in order to Europe or to return to other countries must have all arrangements made to suit the place of departure and return. It is suggested that the party should be made at once, however, as hotel and railway trip can be arranged later. Board of travel and itinerary may be obtained through:

Dr. Chas. Wood Fassett,
St. Joseph, Mo.

INTERNATIONAL MEDICAL CONGRESS.

Dr. RAMON GUTIERREZ, secretary of the American Committee of the International Medical Congress at Lisbon, informs us that the arrangements of the American National Committee for the International Medical Congress have now been fully made. The gentlemen who have planned to present papers at the Congress should at once send abstracts of their papers to the secretary-general of the Congress, Dr. Miguel Bonilla, Madrid. These abstracts should be very short and should simply outline the scope of the paper. The official delegates from this country have been appointed by the Secretary of State, Hon. Elihu Root, and are as follows:

Dr. I. L. McMurtry, Louisville, Dr. John H.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, FEB. 17, 1906.

| CITIES. | Reported deaths in each. | Deaths under five years. | CITIES. | Reported deaths in each. | Deaths under five years. |
|------------------------|-----------------------------|-----------------------------|------------------------|-----------------------------|-----------------------------|
| New York | 1,561 | 505 | Quincy | 10 | 4 |
| Chicago | 527 | 148 | Waltham | 8 | 1 |
| Philadelphia | 612 | 102 | Gloicester | 7 | 1 |
| St. Louis | — | — | Pittsfield | 6 | 1 |
| Baltimore | 217 | 64 | Brookline | 2 | 2 |
| Cleveland | — | — | North Adams | 2 | 1 |
| Buffalo | — | — | Chenues | 2 | 1 |
| Pittsburg | — | — | Northampton | 1 | 0 |
| Cincinnati | — | — | Medford | 10 | 1 |
| Milwaukee | — | — | Beverly | 2 | 3 |
| Washington | — | — | Hyde Park | 2 | 1 |
| Providence | 82 | 26 | Newburyport | 3 | 1 |
| Boston | 217 | 61 | Leominster | 1 | 1 |
| Worcester | 50 | 14 | Melrose | 2 | 1 |
| Fall River | 43 | 24 | Woburn | 4 | 2 |
| Cambridge | 16 | 4 | Marlborough | 4 | 2 |
| Lowell | 32 | 13 | Westfield | 5 | 2 |
| Lynn | 25 | 6 | Peabody | 3 | 1 |
| New Bedford | 31 | 6 | Revere | 3 | 1 |
| Springfield | 19 | 5 | Clinton | 4 | 0 |
| Lawrence | 31 | 12 | Attleborough | 1 | 1 |
| Somerville | 23 | 6 | Adams | — | — |
| Itomoyoke | 18 | 6 | Gardner | 5 | 2 |
| Brookton | 13 | 2 | Milford | — | — |
| Malden | 13 | 3 | Weymouth | 4 | 1 |
| Salem | 12 | 3 | Framingham | 2 | 0 |
| Chelsea | 12 | 3 | Watertown | 2 | 0 |
| Haverhill | 14 | 4 | Plymouth | 1 | 1 |
| Newton | 11 | 4 | Southbridge | 3 | 1 |
| Fitchburg | 13 | 4 | Wakefield | 3 | 1 |
| Taunton | 6 | 1 | Webster | 1 | — |
| Everett | 7 | 2 | | | |

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING FEBRUARY 21, 1906.

ROSENAU, M. J., passed assistant surgeon. Detailed to attend meeting of Committee of American Bacteriologists in New York, N. Y., Feb. 24, 1906, relative to the standardization of tetanus antitoxic sera. Feb. 19, 1906.

MOORE, DUNLOP, passed assistant surgeon. Relieved from duty at Yokohama, Japan, and directed to proceed to Honolulu, Hawaii, reporting to chief quarantine officer for duty. Feb. 14, 1906.

CURRIE, D. H., passed assistant surgeon. Department letter of July 27, 1905, amended so as to grant Passed Assistant Surgeon Currie twenty-one days' leave of absence from July 18, 1905, instead of 2 months. Feb. 17, 1906.

BERKHAETER, J. T., passed assistant surgeon. Granted seven days' extension leave of absence from Feb. 24, 1906. Feb. 20, 1906.

FRISSELL, C. M., acting assistant surgeon. Granted twenty days' leave of absence from Feb. 14, 1906. Feb. 16, 1906.

HALLET, E. B., acting assistant surgeon. Granted five days' leave of absence from Feb. 19, 1906. Feb. 19, 1906.

TOWNSEND, F., acting assistant surgeon. Granted seven days' leave of absence from Feb. 21, 1906. Feb. 19, 1906.

WALSHROUS, M., pharmacist. Department letter of Jan. 30, 1906, amended so as to grant Pharmacist Walrous thirty days' leave of absence from Feb. 8, 1906, instead of Feb. 15, 1906. Feb. 16, 1906.

BOARD CONVENED.

Board of officers convened to meet at the Bureau, Feb. 27, 1906, for the purpose of making physical examination of an officer of the Revenue-Cutter Service. Detail for the Board: Assistant Surgeon-General W. J. Pettus, chairman; Assistant Surgeon J. W. Trask, recorder.

APPOINTMENT.

DR. ALBERT J. NUTE appointed acting assistant surgeon for duty at Port Huron, Michigan. Feb. 20, 1906.

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING FEBRUARY 24, 1906.

F. W. TYRRE, acting assistant surgeon. Detached from the Naval Training Station, San Francisco, Cal., and ordered to the Naval Recruiting Station, Kansas City, Mo.

SOCIETY NOTICE.

AMERICAN MEDICAL ASSOCIATION CHORUS. — I have been asked to announce to eighty voices a chorus of physicians (who have sung together for some years past at the annual dinner of the Massachusetts Medical Society) in order that we may furnish some music at the President's Reception during the coming meeting of the American Medical Association in June, 5-8. We have now forty-five names on our chorus list. We must have five or six rehearsals between now and June. Anyone knowing of any good singers in the profession (graduates or undergraduates) will please suggest names (their own or others') to

RICHARD C. CABOT, M.D.,
190 Marlboro St., Boston.

APPOINTMENT.

DR. CHARLES SEDGWICK MINOT has been appointed James Stillman Professor of comparative anatomy in the Harvard Medical School.

RECENT DEATHS.

SAMUEL DOOLITTLE BROOKS, M.D., M.M.S.S., died in Springfield, Feb. 26, 1906, aged eighty-nine years.

DR. H. MARTIN BRACE, of Perth Amboy, N. J., died on Feb. 20. He was born at Catskill, N. Y., in 1859, and practised in Port Jervis until 1892. At the time of his death he was Mayor of Perth Amboy and Vice-Commodore of the Raritan Yacht Club.

BOOKS AND PAMPHLETS RECEIVED.

Biographic Clinics. Volume III. Essays Concerning the Influence of Visual Function Pathologic and Physiologic upon the Health of Patients. By George M. Gould, M.D. Illustrated. Philadelphia: P. Blackiston's Son & Co. 1905.

Zur Therapie der funktionellen Enuresis. Von Dr. med. Theodor Zangger. Reprint.

A New View of Sleep. By A. K. Bond, M.D. Reprint.

How to Palpate a Movable Kidney. By Charles D. Aaron, M.D. Reprint.

Why Surgical Fixation of a Movable Kidney will not Relieve Dyspeptic and Nervous Symptoms. By Charles D. Aaron, M.D. Reprint.

Pathogenic Micro-Organisms, including Bacteria and Protozoa. A Practical Manual for Students, Physicians and Health Officers. By William Hallock Park, M.D., assisted by Anna W. Williams, M. D. Second edition, enlarged and thoroughly revised. Illustrated. New York and Philadelphia: Lea Brothers & Co. 1905.

The Blues (Splanchnic Neurasthenia). Causes and Cure. By Albert Abrams, A.M., M.D. (Heidelberg), F.R.M.S. Second edition, enlarged. Illustrated. New York: E. B. Treat & Co. 1905.

The Medical Record Visiting List or Physicians' Diary for 1906. New revised edition. New York: William Wood & Co.

Mines de Houille rendues Réfractaires à l'Ankylostome par des Eaux Sulfatées de Filtration. Par Le Dr. A. Manouvrier. Paris. 1905.

Twelfth Annual Report of the Medical Examining Board to the Members of the Connecticut Medical Society for the Year ending July, 1905.

Lectures on Auto-Intoxication in Disease or Self-Poisoning of the Individual. By Ch. Bouchard. Translated with a preface and new chapters added, by Thomas Oliver, M.A., M.D., F.R.C.P. Second revised edition. Philadelphia: F. A. Davis Co. 1906.

Contraction of the Visual Field. A Symptom of Anesthesia of the Retina in Children. By L. Webster Fox, A.M., M.D. Reprint.

Ablepharia Partialis of Upper Eyelids. By L. Webster Fox, A.M., M.D. Reprint.

Ophthalmic Conditions and School Hygiene. By L. Webster Fox, A.M., M.D. Reprint.

Ocular Injuries and their Prognosis. By L. Webster Fox, A.M., M.D. Reprint.

University of California Publications. Physiology. On Chemical Methods by which the Eggs of a Mollusc (Lottia Gigantea) can be caused to become mature. By Jacques Lock. Life Insurance: The Abuses and the Remedies. By Louis D. Brandeis. Boston. 1905.

Progressive Medicine. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., assisted by H. R. M. Landis, M.D. Philadelphia and New York: Lea Brothers & Co. Dec. 1, 1905.

Address.

THE VALUE OF LABORATORY METHODS TO THE COUNTRY PRACTITIONER.*

BY J. B. COWAN, M.D., DANVILLE, KY.

It has seemed to me that in the last few months it is almost impossible to pick up a medical periodical or magazine which does not contain a more or less extensive discussion of the great value of the laboratory. We read long articles devoted to a consideration of the progress made in perfecting the efficiency of laboratory technique. There is, first, the enormous field of original research. Investigations of every sort and description are being conducted everywhere in the world for the furtherance of exact methods in the science of medicine. As the results of these researches become verified they are classed as recognized diagnostic methods—methods which are available in establishing accurate diagnoses.

At present, the whole tendency in medicine is an earnest effort to attain the highest possible degree of accuracy. It is evidenced in the desire to discard and to weed out those methods which depended upon empiricism, and the mythical, vague and mysterious quality called intuition, sometimes called (for most grossly mis-called) "common sense." There are, of course, many facts which long experience has verified, but which are based upon pure empiricism. Such of these as are proven to be facts are of immense value and will be accepted as such, but will always remain the subject of continued investigation until they become solved problems. But there are too many conclusions based upon propositions whose sole foundation is tradition, a tradition which has had its origin, in many instances, in the hurried publication of unverified results of the imperfect work of some enthusiast.

There are, then, two classes of empirical facts. One, which, although we do not know its details of cause, *modus operandi* and effects, yet we do know that long experience and satisfactory observation has established it beyond the slightest doubt. Facts of this class must and will remain, and will be relied upon until exact demonstration proves either that they are false, or establishes and explains them, and by so doing transfers them from the domain of empiricism. The other class of facts are those empirically accepted, but which lack the overwhelming testimony of time and experience; these the tendency to accuracy would discard.

There is also much discussion in our periodicals of such questions as the relative value of the scientist and the practical physician. I have recently read an article entitled "Scientist versus Physician." Such articles seem to have their origin in the doubt as to whether the physician is, or can be, a scientist. But really it is an expression of the question, "Is the laboratory worker doing more for medicine than the clinician?"

There can be no alienation of laboratory from clinical methods; they are so interdependent as to be incapable of separate existence. Within my own limited time spent inside the medical body I have heard much ridicule cast at the science of bacteriology and laboratory methods in general. I have heard one gentleman repeatedly say that he preferred to rely upon his common sense than to be "fooling" with such things. In the present time there can be no excuse for the continuation of such opinions.

The medical periodical comes to every man's office, and he cannot fail to keep himself in touch with something of the present development of medical science if he reads his periodicals at all. It does not require a knowledge of the technique to be convinced of the value of the laboratory. If our common sense friend will read his periodicals he will learn that reputable men whose testimony must be believed are accomplishing results "not dreamed of in his philosophy" of pseudo-common sense. Even if he knows nothing in detail of the use of the microscope, he is forced to know that its value to medicine can never be calculated. It is not to be expected that a man can keep so well up in all the many departments of medicine as to be able to take his place as a specialist in its every branch, but unless he does read enough to know something of what is being done in these branches he is already so far behind the procession that he will never catch up to it.

The great search after truth in the science of medicine is bringing about such a specialization of its work that no one man can do more than keep himself posted upon the more important results of these several branches. In our large cities the matter has so divided itself among numerous men that every man has at his disposal and for his help the skill and peculiar knowledge of some one man working solely in a separate branch. The amount of value of this combination cannot be over-estimated. Even in our smaller cities the division of the work has advanced to quite a degree of helpfulness by developing efficiency of those men who can devote their time to specializing. The more that the work and investigation in the medical sciences is divided up, the more time there will be devoted to individual problems. And each problem will, by this natural selection, be assured to those men whose acquaintance and experience with it make them peculiarly fitted to deal with its intricacies.

But this does not mean the alienation of the laboratory and the clinic. For without the clinic where would come the problems for solution, or the material for experimentation? In fact, without the clinic there would be no need for any such experiment at all. And where else could I find that supreme test of the correctness of laboratory research and consequent suggestions seen at the "bed side"? But the specialization of medicine means more than the separation into the abstract investigator and the concrete dealer with individual cases. It means that the laboratory

*The address of the retiring president of the Boyle County Medical Society. Read at Danville, Ky., December, 1905.

methods must be evolved by one set of men and must be judged of by another set. The clinician will always be the man to have the last "say" upon medical questions. The true value of any medical discovery is not to be estimated by its scientific accuracy nor by laboratory methods, but always depends upon its value to the clinician at the bed side, in other words, to the ultimate object of our calling — to sick and suffering man.

We, who live in the country, have little time to specialize. It is incumbent upon us all to prepare ourselves to the best of our abilities, and then — not to sit down and let the years pass us by and leave us nothing out of the great accumulation of their knowledge, but to keep on preparing ourselves until the last.

A man comes out of a medical school, provided his opportunities have been good, fairly well equipped to begin to acquire his education. And this education can only be secured by continually keeping up as well as he can. If he lives in a large city he may keep up in his own branch and depend upon the other fellow for help in the others.

But what of us who live in the country? Simply because the great mass of new matter turned out year by year is too much for any one intellect is no reason why the country doctor should not show in this particular, as he does in all others, evidence of ability to surmount great obstacles.

The practising city physician is, by reason of his environment, stimulated to mental effort. His surroundings, his contact with thinking men of other professions than his own, but more especially, his close association with the earnest, thinking men of his own calling, are constant spurs to bring out all that is best in him. Nothing is truer than the fact that thought begets thought. The country physician, on the other hand, is isolated; he must meet, single-handed and alone, many of the exigencies and unravel many of the problems which are presented to his more fortunately placed city brother. He lacks the great advantages of large clinics, which offer the city practitioner such great opportunities, not only for observing a great variety of cases and a great many cases of these varieties, but it gives him the opportunity for putting into practice the many suggestions of which he reads. And yet the really important feature of the large clinic is not in the above enumeration, but, it seems to me, lies in the great opportunity for training, under the very best possible circumstances, the powers of observation; for developing to their highest possible attainments all the faculties.

The association with a body of earnest, hard-working and high-minded colleagues at the same time serves as a stimulus to good work and keeps a man from dropping into routine methods.

The country practitioner lacks the advantages of the clinic; in the more isolated regions he is alone and has no associate with whom he may share responsibilities, or from whom he may derive inspiration. In the towns we do have fraternal relations, which, in the writer's judg-

ment, are capable of producing more valuable results than they do now.

The meetings of the country and district societies show an appalling lack of interest. Our own county organization is in no way different from others; for the president of one of our adjoining county societies tells me that it is rare to have a quorum present at their monthly meetings. We do not get together and spend pleasant and profitable evenings simply on account of a state of lethargy which has overtaken us. And I am free to say that I believe this chilling lack of interest is due to the feeling that we have nothing of interest to talk about.

We feel that the old, old story of typhoid fever and appendicitis has been gone over again and again until the subject is threadbare. We feel that we have said all that we know how to say upon pneumonias, pleurisies and obstetrics, and all of these common-place topics. It is not that the diseases have changed and modified with the passing of years. They are the same entities as years and years ago, but the change has come from the continued advance putting new interpretations upon them; lending their thread-bare topics the keenest of new interest.

And I challenge any member to say that it is impossible to introduce into our county societies the same new features, in kind, if not in degree, as are introduced into the great medical meetings in our large cities. There is not a man among us who does not have a large number of cases every year which, if he would apply to them the discoveries of the newer pathology and methods of investigation, would yield a big return, not only in the interest of the individual case and cases of its kind, but in every other case; an interest arising from more accurate observation.

It is impossible, from the very nature of the circumstances, that the country practitioner can develop himself into a specialist in every branch of the great domain of medical science. But the limits of his progress and of his improvement are to be determined solely by the amount of earnest, conscientious effort devoted to it. It may be impossible that he should invoke immediately the perfected efficiency secured by the rapidly changing methods of investigation. It may be that he has got to be always a little behind, but just how far he will be behind depends upon himself. If he dismisses the use of laboratory methods in their highest development he will never use them at all. But if he will diligently set himself to apply such methods and to adapt them to his changed conditions, conditions modified by his circumstances, and give his whole-souled attention to this adaptation, the degree of proficiency to be attained will be limited by the amount of endeavor. It is, perhaps, not possible, at least not probable, that he will do much to *advance* the science of medicine; but it is possible that he can, if he tries, prevent the procession from leaving him behind. And the recompense for such effort is to be found in the endeavor itself.

If we say it is impossible that he should con-

been so simplified as to be within the reach of the general practitioner. I believe, however, that in case the country practitioner gets "rusty" on any of these matters he can almost take a post-graduate course in his own laboratory by sending to some of the city laboratories and securing mounted specimen. A careful résumé of any subject with such specimens before him is of immense value.

There are, I believe, many things in the laboratory which must always be done by the laboratory expert, the man who devotes his whole time to this subject, who is doing the same thing day after day and, perforce, becomes unusually proficient in it. To him, I think, must belong many investigations in pathological histology. I do not think that the average country practitioner can have sufficient material to keep him up in this branch. The examination of uterine scrapings, of the stomach contents for cancer cells, is more difficult than the bacteriological examinations, but, again, these depend entirely upon the persistent effort of the individual, and this makes the only limitation.

The value of the laboratory to the country doctor is, then, to be summed up in the following conclusions:

(1) Its value in dollars and cents.

Any agency which will increase a business along profitable lines is a valuable asset. In the country community more than elsewhere the results of the physician are discussed by the laity. His successes and his failures are considered and compared with those of his competitors. The intelligent layman can and will distinguish the difference between the authoritative and forcible statements made by the physician who has applied to the case under investigation accurate, scientific methods and the hesitating, ambiguous expressions of the man who has jumped to conclusions. The right sort of self-confidence, arising from accurate knowledge, begets a confidence in the patient which is the physician's most valuable asset. Such confidence is bound to increase the amount of his business and improve the character of his clientèle.

(2) Its value to his patients.

Anything which increases his efficiency and contributes to his professional attainments must redound to the good of his patients. The patients of the country doctor are as much isolated as he, and must depend wholly upon him; he is, therefore, in duty bound to give them a compensation for this absolute dependence. But a consideration of the value to the patient implies a doubt of its value in general, which has been settled beyond discussion.

(3) Its value to himself.

And here is to be found a value peculiar to the country doctor. He must find within himself his inspiration to good work. As has already been said, he feels his isolation deeply, and envies his city brother his constant association with earnest, thinking men of his own calling. It seems to me that the laboratory offers to us who live in the country our only means of keeping up with

the times and our only stimulant to persistent effort toward self-improvement. The country physician, after a long, cold drive, is too often prone to rush through his investigation of a case, jump to a tentative diagnosis, and apply expectant treatment, blindly depending upon the powers of nature. It may be urged that the country physician cannot systematize his time, and, therefore, lacks opportunity for laboratory work. This may be answered by saying that there is no class of men doing more work for which they receive no return, either in money or gratitude, than the country physician. And if he will do less work of a certain sort in order that he may do a smaller amount of work of a better sort he will be more worthy of compensation. There can be no question that patients are willing to pay a physician, in some measure, in proportion to his ability. If, therefore, he increases his ability by the use of the laboratory he can make his time so spent pay him a return in his greater ability, represented by an improvement in the size of his fees.

The country physician is, too often, an empiricist. He, perhaps, more often than any one else, fails to distinguish between *post hoc* and *propter hoc*. This propensity is evidenced in the testimonial "literature" circulated by the proprietary nostrum. This literature often forms the major part of his reading, and is, not infrequently, his whole library so far, at any rate, as his therapeutics is concerned. The desire for accuracy, born of the laboratory, prompts him to discard such courses of information and tends to stimulate him to more profitable reading.

If he is engaged in the application of laboratory methods he is very apt to keep himself posted and keep in touch with his profession.

The chief value in this regard, as in all others requiring mental and intellectual effort, comes in the improvement of the man himself; and, as was said before, the compensation for such endeavor is in the effort itself.

Massachusetts General Hospital.

CLINICAL MEETING, JAN. 26, 1906.

THE VALUE OF VIRCHOW'S SMOOTH ATROPHY OF THE BASE OF THE TONGUE IN THE DIAGNOSIS OF SYPHILIS.*

BY NATHANIEL BOWDITCH POTTER, M.D., NEW YORK.
Visiting Physician to the City Hospital and to the French Hospital;
Consulting Physician to the Central Islip State Hospital;
Instructor in Medicine, Columbia University.

My friend and colleague, Dr. Horst Oertel, pathologist to the City Hospital, called my attention to this sign two years ago, while performing an autopsy upon a patient who died in my wards, with the clinical picture of primary anemia. The blood examination in this case was not typical, and our ante-mortem diagnosis was left in doubt. Dr. Oertel demonstrated to us a marked atrophy of the base of the tongue, decided that

* Read in part at the Jan. 26 Clinical Meeting of the Medical Board of the Massachusetts General Hospital.

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the patient had, therefore, had syphilis, and considered that the anemia was probably secondary to the luetic infection.

This interested me to endeavor to determine how useful this sign may be in the diagnosis of syphilis during life. Before summarizing the results of my investigation, a résumé of the chief articles upon the subject will be of interest.

Lewin and Heller¹ state that Virchow repeatedly emphasized the value of the atrophy of the "Zungenbalgdrüsen" (follicular glands) in the diagnosis of late syphilis, and that he believed there was a causal relation between the two. His teaching descended by word of mouth among pathologists. The oldest preparation in the Institute is dated 1863. Lewin himself spoke of it as early as 1879.² These two authors examined the protocol records of 6,583 autopsies and found anatomically confirmed syphilis in 3% of them, three fourths of which were acquired constitutional lues. They found a smooth atrophy of the base of the tongue in 103 of the 6,583 cases (1.5%), and of these 103 cases definite evidence of syphilis occurred in 69%. So large a percentage supported the assumption of an etiological connection between the smooth atrophy and syphilis. They considered the confirmation of smooth atrophy a more useful sign of syphilis to the clinician than to the syphilographer, because most cases of syphilis of the internal organs come under the care of the former. They enumerated 64 cases from the medical clinic, 9 from the surgical clinic, 14 from the psychiatric and nerve clinic and 4 from the gynecological clinic, a total of 91, as against 5 patients from the syphilitic clinic. In an analysis of 71 cases in which this sign was observed, no special frequency of any other diseases could be detected. In an analysis of the patients' ages in 87 cases,

| | |
|-----------|----|
| 20 to 30 | 9 |
| 30 to 40 | 5 |
| 40 to 50 | 16 |
| 50 to 60 | 12 |
| 60 to 70 | 8 |
| 70 to 80 | 2 |
| Not given | 15 |

87

In other words, 62% of the patients were over forty years old. They found that women possess this sign rather more frequently than men, and explain it upon the ground that primary and secondary syphilis is so often unrecognized in women, and they are later affected with so-called tertiary symptoms. They consider that the atrophy persists longer than most of the other appearances of syphilis, and that it is probably irreparable. They believe that an interstitial inflammation produces an actual smooth atrophy, whereas an ulcerous or gummatus process produces a cicatricial condition. They describe the microscopical appearance of the upper layers at the base of a normal tongue, and discuss Kelliker's account of the lymphoid tissue surrounding the follicular glands, and the arrangement of

lymphoid tissue in the shape of masses or strands, the whole forming a so-called lingual tonsil.

In detailing the appearances of the atrophied tongue, they mention the occurrence of a secondary hyperplasia or compensatory process and of marked turgidity, small hemorrhages, collections of leucocytes, cloudy swelling, — all of some importance in understanding the smooth atrophy. Then follows a description of the follicular glands in a normal tongue. In a sagittal section of the normal tongue from the angle of the circumvate papilla to the epiglottis, they found that there were normally 5 to 12 glands, whereas if this atrophy was present, only 1 to 3 could be discovered. The glands normally had a diameter of 2 to 4 mm., but in the atrophy they were frequently only 1 mm. in diameter, or oftentimes only a little collection of round cells. In many cases, in spite of the disappearance of numerous glands, there was a compensatory hypertrophy of others. They attempt to explain the process as follows: The glandular substance is injured by the immigration or new formation of syphilitic tissue cells within their structure. The new growth crowds aside the original tissue, but the cells soon die and are cast off. Individual glands become smaller or disappear. The process acts interstitially without the formation of gumma or ulcers and actually without real scar formation. Or again that a syphilitic endarteritis precedes, and so diminishes the nutrition to the glands.

They measured the adenoid tissue in normal and atrophied tongues, and found that the former contained five to seven times as much adenoid as the atrophied. They also mention the congested appearance of the blood vessels observed in some cases, and attributed it to a stasis, caused perhaps by the atrophy. They found the mucous membrane usually one fifth the normal thickness, and noted other differences as well. In the clinical examination they depended largely upon palpation, and emphasized the importance of estimating the number, distribution, consistency and size of the glands. They do not lay much stress upon the laryngoscopic examination.

They examined about 300 individuals to determine whether Seifert's statement that 50% to 60% of all patients with specific lesions of the buccal mucous membrane exhibited erosion, aphthae, plaques, or ulcers upon the base of the tongue, and found such lesions in only 34%.

Then follows a detailed description of 14 cases of smooth atrophy of the base of the tongue in connection with syphilis. They were derived chiefly from Lewin's private practice.

They consider that three types of the atrophy can be distinguished. In the first, the entire surface of the tongue is affected, and the normal thickness of the tongue is reduced to one half the normal. In the second, the process of a few years' duration has not advanced to a stage of the tongue, but the entire base of the tongue.

The atrophied tongue plate is shown in Plate I, and microscopical appearance of the tongue in Plate IV and D.

¹Virchow's Archiv. 1880, 4, 1. The atrophie der Zungenbalgdrüsen und die Verhältnisse der Zungenpapillen.

²Ueber pharyngeale Syphilis.

Otto Seifert of Würzburg, in an article, "Ueber Syphilis der Zungentonsille,"² reviews the literature upon syphilis of the lingual tonsil. Most of the articles refer to the occurrence of secondary appearances or of gummata; but he also mentions Lewin's division of syphilis of the lingual tonsil into three types: (1) broad condyloma, (2) gummata, (3) atrophy. He cites 71 cases of syphilis which he examined from the first of January to the first of November, 1892. These cases occurred in the syphilitic wards of the Julius Hospital, in his ambulatory clinic for nose, throat and laryngeal affections and in his own private practice. Ten (3 male and 7 female) of these were affected with a late form, 6 with acquired and 4 with hereditary syphilis. He was unable to determine an atrophy of the "zungenbalgdrüsen" in any of the ten. In some of them the glands were even hyperplastic; also among the cases of hereditary syphilis he found some with hypertrophic lingual tonsils. He mentions two of Lewin's attempts to prove that the atrophy of the lingual tonsil is diagnostic of syphilis.⁴

In a second article,⁵ five years later, Seifert reviews the literature of syphilis of the lingual tonsil more thoroughly than in the preceding, and then discusses the value of Virchow's smooth atrophy of the base of the tongue in the diagnosis of syphilis. Lewin, he says, learned to recognize the sign from Virchow's lectures, and first called attention to it in 1879 and again in 1891.⁶

In a doubtful case of Goldzieher, this sign was utilized for the purpose of diagnosis, again in a gummata of the forehead.⁷ Later on, Lewin considered the absence of this sign argued against the syphilitic origin of a case with spinal cord disease.⁸ He next demonstrated the sign in a case of gummata of the tongue,⁹ and again¹⁰ in an obscure case of scar formation of the abdominal wall. He cited 3 other cases,¹¹ one of which Lassar diagnosed as a malignant tumor of the pharynx. In another case Lewin found in addition to the atrophy of the glands an hypertrophy in some of them.¹² Heller¹³ based the diagnosis of a doubtful case upon this sign. Hansemann found a smooth atrophy at the base of the tongue in a case of puerperal sepsis.

Sandmann¹⁴ demonstrated that this atrophy is by no means so frequently found as autopsy records seem to show. Michael¹⁵ found a similar appearance in many old people without a suspicion of syphilis, and Mraček¹⁶ is of the opinion that Lewin has exaggerated its importance and clinical value. Seifert reminds the reader that in 10 cases of late syphilis mentioned in his former article, he was unable to find an atrophy in any

of them; he then adds a table of 12 other cases of late syphilis which he examined, in none of which could he find a smooth atrophy of the lingual tonsil, and in 4 of them he was able to demonstrate an excessive hypertrophy, and therefore concluded from these 18 carefully examined cases that this atrophy is by no means a valuable sign for acquired syphilis.

In 2 cases of hereditary syphilis, Schotz¹⁷ found the glands decidedly thickened.

Strauss¹⁸ does not mention the lingual tonsil.

Skladny¹⁹ in 24 cases of late hereditary syphilis, found 20 with an atrophy of the lingual tonsil. Hellman²⁰ is apparently of the same opinion, since in case of doubtful syphilitic caries, he considered the smoothness of the base of the tongue as a sure sign of syphilis.

Seifert mentions again the 4 cases of hereditary syphilis with quite marked hypertrophy of the lingual tonsil, and adds 4 more cases, 3 of which showed a lingual tonsil of normal size and free from scars. In the third, the lingual tonsil was hyperplastic on both sides and scarred in the middle; he therefore objects to Skladny's positive statement that an atrophy of the lingual tonsil is always a sign of late hereditary syphilis.

Lesser²¹ mentions Virchow's interest in the sign; that it was overlooked by clinicians until the publication of Lewin and Heller's paper; he describes the opposing views of Seifert and others and explains why the sign fell into disrepute. He then attempts to estimate its value by examining the sections from Professor Langerhan's autopsy material. He avoids some of the sources of error which occurred in Lewin and Heller's paper. In many of their cases the neck organs were not examined; in others the prosector did not recognize or appreciate the value of the sign; in others some of the prosectors took the history sheet's statement of the presence or absence of syphilis as being correct, and in still others, the diagnosis of syphilis was made directly from the presence of the sign. In his series of cases, Lesser considers syphilis to be demonstrated only (1) in the presence of an actual specific exantheme (condylomata or gummata); (2) from the existence of scars upon the skin, the mucous membranes or the bones, which by their pigmented appearance at the periphery, their location, their grouping or their configuration (circular in crescents) are diagnostic; or (3) from interstitial growths in internal organs, perhaps precursors of gummata.

Although nothing is especially characteristic of these interstitial growths, unless they are retrograde, he considers their locations important, *e. g.*, orchitis interstitialis, or their grouping, as, *e. g.*, in the liver, or sometimes their selection, such as interstitial inflammation in several organs, kidney, liver, myocardium, etc. He does not believe Lewin's three clinical stages are helpful, nor does he think they express the essential

¹⁷ Schotz: Zur Casuistik der Larynxsyphilis bei Kindern. Dtsch. med. Wochenschr., 35, 1885.

¹⁸ Strauss: Ueber Lues tarda laryngis im Kindesalter, xiv, Bd., 1885.

¹⁹ Skladny: Ueber das Auftreten von glatter Atrophie des Zungen-ganges in Folge von hereditärer Lues. Dissert., Berlin, 1894.

²⁰ Hellman: Caries syphilitica ossis ethmoidalis Auskultation, etc., Arch. f. Laryng., iii, Bd., p. 241.

²¹ Berl. Klin. Woch., 1903, 45, p. 1026.

² Münch. med. Wochenschr., 6, 1893. Berliner med. Gesellschaft, 20, vii, 1892.

³ Verein f. inn. Med., Berlin, 21, xi, 1892.

⁴ Archiv. für Dermatologie und Syphilis, 1898, no. 44, p. 213.

⁵ Berl. dermat. Vereinig., 7, xii, 1892.

⁶ Ibid., 4, vi, 1892.

⁷ Berl. med. Gesellsch., 15, xi, 1893.

⁸ Dermat. Vereinig., Berlin, 6, xi, 1894.

⁹ Berl. dermat. Vereinig., 14, iii, 1893.

¹⁰ Ibid., 4, vi, 1893.

¹¹ Ibid., 17, iii, 1896.

¹² Ibid., 14, i, 1896.

¹³ Berl. Laryng. Gesellsch., 10, ii, 1893.

¹⁴ Michael: Die Krankh. d. Zungentonsille. Heymann's Handb., ii, Bd., p. 626.

¹⁵ Nothmann, spec. Pathol. u. Therapie, xvi, Bd., p. 261.

characteristic of the condition which is the indurated feeling, present in all three of the stages. He regards the thickening of the adenoid tissue to be primary, and the atrophy of the glands secondary to this induration. He thinks a better term would be "glossitis levis posterior," the glossitis expressing the inflammatory nature, the levis the smooth effect produced. He considers palpation to be the best clinical method, and that the laryngoscopic examination should only be used as a control.

In examining the autopsy records of the Moabit-Krankenhaus from 1896 to 1902, he found 166 cases with atrophie levis basis linguae, in which 73 (44%) syphilis was demonstrated anatomically, 17 with gummata, 2 with condylomata, 23 with diagnostic scars on the sexual organs, mucous membranes or skin, 21 with a diagnostic interstitial inflammation in the internal organs. These were all in acquired syphilis.

In hereditary syphilis, Lesser cites Skladny's figures. The latter examined 24 cases of interstitial keratitis in large children and found the sign positive in 20. Other observers have not confirmed his results. The writer then critically examined the percentages quoted by Lewin and Heller and by himself. He considers the sign to be the result of a primary interstitial process similar to a syphilitic hepatitis and not to be preceded by gummata. Of his 166 cases, only 13 showed the typical scarred tongue which we see as a result of a gummatus process. He found no preponderance of females as Lewin did, nor any evidence of a contributing cause in the use of tobacco or alcohol. It occurred at all ages, although he was unable to ascertain any definite time after infection. He found the sign in 21.6% of syphilis with definite tertiary lesions, so that he concluded that the coincidence of glossitis levis and tertiary syphilis is rare, probably because the latter develops much before the former. Hence the rarity of the affection in syphilitic clinics. He expresses surprise at Serfert and Goldschmidt's negative results. He considers the sign very much more important for the clinician than for the syphilographer.

The results of my investigations are as follows:

Source of the material. The patients were selected partly by choice of the internists, partly at random from the eight medical wards at the New York City Hospital, rather a large percentage of them with the history or physical signs of an old syphilitic infection. Most of the remainder were selected by the resident physicians at the Central Islip State Hospital, chiefly from among the parietics or among inmates known to be old syphilis. A few control cases were interpolated to make the test more open. Various other sources furnished the remaining cases.

Method of examination. Some seventy old cases were examined visually with the aid of a laryngeal mirror. This attempt convinced me that the sign could not be appreciated by sight. These cases are not included in the list.

Palpation proved more successful. The patient was asked to protrude the tongue as far as possible; the examiner grasped it in his left hand

with a piece of gauze or a soft towel, and then carefully inserted the index finger of his right hand along the dorsum of the tongue until he reached the circumvallate papillae; then the territory behind the triangle of papillae was explored with very gentle palpation.

A pair of thin rubber gloves or a rubber cot to protect the index finger was employed in many instances. Neither interfere with the result. If the examiner is careful to avoid touching the uvula or the back of the pharynx, and if the patient submits to the momentary discomfort, very little difficulty ensues. I did not find the test caused any more discomfort than the laryngeal mirror. Depending upon the patient's acquiescence and self-control, the back of the tongue is hard, rigid and contracted, or soft, flexible and relaxed. The contrast between the firm, flattened, smoothed, hardened mucous membrane, sparsely studded with small, shot-like glands, both mucous membrane and glands supported upon a yielding cushion of muscle can be made out very much more distinctly than if a similar condition is embedded in a firm, plaster-of-paris-like contracted tongue.

Classification. I was unable to follow Lewin and Heller's classification into three stages. Although a sharp distinction is plain between the soft, velvety, cushion-like adenoid tissue at the base of a normal tongue, and the firm, hard, smooth base in a markedly atrophic tongue with a few shot-like glands, so many cases presented variations that I found it convenient to subdivide my series into: *Negative cases*, those in which the base of the tongue was perfectly normal; *doubtful cases*, those in which there was some hardening, either of glands or mucous membrane, one or both, or some diminution of their number or size; *probable cases*, those in which some or all of these points were more striking; and finally, *positive cases*, those in which the atrophy was very marked.

| | Below 21 | | 1 to 50 | | Above 50 | | Total | |
|----------|----------|----|---------|----|----------|----|-------|----|
| | A* | B* | A | B | A | B | A | B |
| Negative | 17 | 0 | 27 | 1 | 1 | 0 | 45 | 1 |
| Doubtful | 12 | 3 | 13 | 15 | 10 | 17 | 35 | 32 |
| Probable | 4 | 1 | 20 | 15 | 11 | 8 | 35 | 24 |
| Positive | 0 | 4 | 0 | 37 | 8 | 13 | 12 | 50 |

*A = without satisfactory evidence from physical examination or from patient's history of a previous syphilitic infection.

B = with some reasonable evidence of a previous syphilitic infection, either from physical examination or from history.

The results were tabulated from the material in the tables being referred to. In each table, the "A" and "probable" cases are given in the first column of the glandular test, the "B" and "positive" cases in the second column. In the glandular test, the "A" and "probable" cases are given in the first column of the glandular test, the "B" and "positive" cases in the second column. In the glandular test, the "A" and "probable" cases are given in the first column of the glandular test, the "B" and "positive" cases in the second column.

Control cases. In the control cases, the sign was not present. In the control cases, the sign was not present. In the control cases, the sign was not present.

Conclusion. The sign is a reliable indicator of old syphilis. The sign is a reliable indicator of old syphilis. The sign is a reliable indicator of old syphilis.

A DEMONSTRATION OF THE SPIROCHAETA PALLIDA OF SYPHILIS, WITH DESCRIPTION OF RAPID METHOD OF STAINING.

BY T. J. MANAHAN, M.D., BOSTON,
From Pathological Laboratory, Massachusetts General Hospital.

In May, 1905, Schaudinn and Hoffman presented their work on the occurrence of a spiral-shaped organism in syphilitic lesions. This organism they named the *Spirochaeta pallida*. Their observations were confirmed by Metschnikoff one month later. Since then a great many confirmatory observations have been made by others in this country and abroad. The evidence is conclusive that primary lesions, condyloma, macular, papular, pustular lesions and mucous patches contain the *Spirochaeta pallida* either constantly or in the majority of cases. Schaudinn has demonstrated it in aspirated splenic juice taken from a case of recently acquired syphilis. Rickzet and Noeggerath have found it in the blood, while several others have failed. The pallida has been found in the skin of congenital syphilitic children. A most interesting case was one of Flexner's, who found the organism in skin lesion of a child whose mother acquired syphilis five years before. Metschnikoff and Flexner have found the *Spirochaeta pallida* in monkeys which have been successfully inoculated with syphilis.

The *Spirochaeta pallida* measures 4 to 10 microns long and $\frac{1}{2}$ micron wide. The curves are short, corkscrew-like, and vary in number from 4 to 20. The organism is motile, rotating on its long axis, and has sharpened ends. Flagella have been observed. I have observed a forking at the end in one specimen. Other spirilla occur about the healthy genitals and in non-specific ulcerations. The form seen most frequently is the *Spirochaeta refringens*. This organism is broader, has longer and fewer curves and stains more intensely than the pallida. There is no difficulty in differentiating them after one has made many observations. In a recent paper, Schaudinn and Hoffman state that it is their conviction that the pallida is the definite cause of syphilis. Metschnikoff expresses confidence and thinks syphilis is a chronic spirilla infection.

The first specimens I examined were stained by the Geimsa method, which is the one first recommended by Schaudinn and Hoffman. This method requires eighteen hours and stains the *Spirochaeta pallida* very faintly. On experimenting with Dr. Wright's blood stain I found the organism could be much more intensely stained in a period of five minutes with this stain. This rapid and more intense method of staining is a great advance, as it saves time and makes the recognition of the organism comparatively easy. The application of Wright's blood stain to the staining of smears obtained from syphilitic lesions is as follows: The stain is prepared according to the directions given in Mallory and Wright's "Pathological Technique," page 371.

Five tenths of a gram of the dried methylene blue eosin precipitate is added to 100 cc. of pure

methyl alcohol, Merck's guaranteed reagent, and after a concentrated solution is obtained, the solution is filtered. Take 30 cc. of the filtrate and add 10 cc. of pure methyl alcohol.

This solution is now ready for use and should be kept in a tightly corked bottle to prevent evaporation. If evaporation takes place, a precipitate will form which will so obscure the specimen as to prevent the recognition of the organism.

The film is covered drop by drop with as much of the staining fluid as the coverglass can conveniently hold and allowed to remain one minute. Water is then added, drop by drop, until a metallic film appears on the surface. In my experience I have found that four drops give the best results. The stain is now kept on for five minutes and then washed in water. The amount of water used should be just enough to remove the staining fluid. On examination, the red corpuscles should be a pale blue and the *Spirochaeta pallida* purple. If the differentiation is carried any further with water, the spirochaeta do not stain as deeply. The coverglass is dried over the flame and mounted in balsam. Preparations should be made with great care, in order to prepare thin and evenly distributed smears. The method of obtaining the material depends on the seat and character of the lesions.

In chancres, where ulceration has taken place, the following method has been found most suitable: The lesion is washed with water and gauze, removing as much of the necrotic tissue as possible. At the junction of the ulcerated area with the indurated margin a small incision, 4 mm. long and 2 mm. deep, is made with a tenotome. The first few drops of blood are removed with gauze and the bleeding checked by pressure. Then with the back edge of the tenotome a small amount of material from the bottom and sides of the wound is removed. This material, which will be blood-tinged serum, is then placed on a $\frac{3}{4}$ -inch coverglass, which has been carefully washed in absolute alcohol and ether and a smear made in the same manner as you would prepare a blood smear. In mucus patches two methods are employed to obtain the material. The selection of the method to be used depends upon the character of the lesion. In fissures of the tongue or mucus patches which have gone on to ulceration, the lesion is washed with gauze and water. The necrotic material is then removed with a small, blunt curette. After the bleeding has stopped, the base of the fissure or ulcer is gently scraped with the curette. The material thus obtained is placed on a coverglass and a smear made. In early mucus patches before ulceration takes place, the procedure is as follows: The edge of the diseased mucous membrane is lifted with a tenotome and from the wound a drop or two of the blood-tinged serum is placed on a coverglass and a smear is made.

Preparations from the skin eruptions may be made by one of the two following methods:

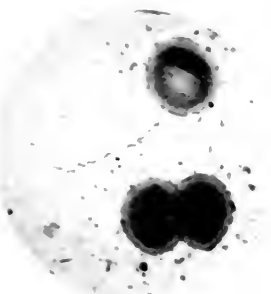
A bleb is made by the application of strong ammonia over the skin lesion. When the bleb is formed, remove the serum with a platinum

loop and make a smear. This method has not been satisfactory. Another and more satisfactory way is to scrub the skin thoroughly with alcohol and water. Then select a well-developed macule or papule and scrape off the upper layers of skin with a knife until a bloody serum exudes. A good-sized drop of bloody serum is allowed to form. Remove this drop by touching it with the surface of a coverglass. The drop will adhere to the coverglass and a smear is then made.

later characteristic eruption appeared. The diagnosis of syphilis was made and the patient placed under treatment. The treatment has been constant and the only lesions now are two mucous patches. Smears from the mucous patches showed many spirochaeta pallida.

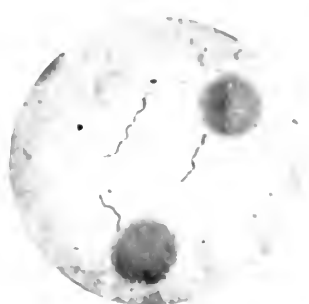
CASE VII. Male; age, twenty-one. Two months ago developed gonorrhea and an ulcer on the penis. One month ago throat and mouth became sore and at this time he noticed a faint skin eruption. At present he has several mucous patches and anal condylomata. Clinical diagnosis syphilis. Smears from mucous

SYPHILIS — MUCOUS.

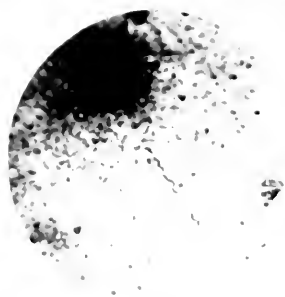


CASE I. From char. five weeks' throat sore, with spirochaeta pallida of syphilis and red throat eruption. (X 1500)

Photos by Mr. L. S. Brown.



CASE II. From char. five weeks' throat sore, with spirochaeta pallida of syphilis and red throat eruption. (X 1500)



CASE III. From char. five weeks' throat sore, with spirochaeta pallida of syphilis and red throat eruption. (X 1500)

smears positive. Several smears were examined in two lots. The second smears were taken four days after the first examination. Later the patient developed a phymosis and was circumcised. Following the operation the local condition improved rapidly and was discharged well five weeks later with no evidence of syphilis. (See plate.)

CASE VI. Male, age, twenty-eight. Had gonorrhea for three months. Ten days ago a sore came on penis following coitus three weeks previous. Six weeks

later characteristic eruption appeared on forearm and palms. Remains of induration on prepuce. Enlarged epitrochlear glands. Tonsils enlarged. Several decaying mucous patches. Clinical diagnosis, syphilis. Smears taken from mucous patches show many spirochaeta pallida.

CASE VIII. Male, age, twenty-four. He had a sore on the upper middle surface of penis 14 mm. in diameter, slightly indurated. The center is covered with no rotting granulation tissue, the edge is clean cut,

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A bleb is made by the application of strong ammonia over the skin lesion. When the bleb is formed, remove the serum with a platinum

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Through the kindness of Drs. J. T. Bowen, C. J. White, D. F. Jones and H. Cabot, I was able to obtain material from eighteen cases. These cases were from the Skin, Surgical and Genito-Urinary Out-Patient Departments of the Massachusetts General Hospital.

CASE I. Male; age, thirty-two. Ulcer appeared on penis three weeks after coitus. At present time, five weeks from appearance of sore, there is an ulcer on the corona 1 cm. in diameter with indurated edges. There is a macular papular eruption on the chest, back, abdomen and arms and also a mucous patch on the lower anterior gum. (See plate.)

The clinical diagnosis was syphilis.

Coverglasses were taken from the ulcer and showed several spirochaeta pallida. The examination of the mucous patch showed many spirochaeta pallida, there being about three times as many as seen in the smear from the penis. The smears from the skin and blood were negative.

CASE II. Male; age, seventeen years. Gonorrhea for two weeks. Twenty-three days after coitus a small sore appeared on the penis. Four weeks later a fine papular eruption on the chest, back and arms. The diagnosis of syphilis was made at this time. Eleven weeks later I examined smears taken from the skin. At this time the eruption was fading. I examined ten smears all of which were negative, likewise smears from the blood.

CASE III. Male; age, eighteen. Light weeks ago primary lesion on penis, followed five weeks later, by a macular eruption on body and arms and is still present. The clinical diagnosis of syphilis was made on the day the smears were examined, and the case up to this time had no anti-specific treatment. I made smears from a young papule and found a few spirochaeta pallida. The blood smears were negative.

CASE IV. Male; age, twenty-four. Three weeks ago sore came on penis two weeks after coitus. On the under side of the frenum is a hard ulcerated area. The epithelial, inguinal and post-occipital glands are enlarged and there is an eruption on the chest and arms. Clinical diagnosis syphilis. Smears from ulcer showed several spirochaeta pallida, while smears from the skin macule and the blood were negative.

CASE V. Male; age, twenty-six. Urethral discharge for two weeks. Examination shows urethral discharge with multiple indurated ulcers about the prepuce. Inguinal glands enlarged but not tender. Smears made from the ulcers failed to show any of the spirochaeta pallida. Many smears were examined in two lots. The second smears were taken four days after the first examination. Later the patient developed a phimosis and was circumcised. Following the operation the local condition improved rapidly and was discharged with five weeks later with no evidence of syphilis. (See plate.)

CASE VI. Male; age, twenty-eight. Has had gonorrhea for three months. Ten days ago a sore came on penis following coitus three weeks previous. Six weeks

later characteristic eruption appeared. The diagnosis of syphilis was made and the patient placed under treatment. The treatment has been constant and the only lesions now are two mucous patches. Smears from the mucous patches showed many spirochaeta pallida.

CASE VII. Male; age, twenty-one. Two months ago developed gonorrhea and an ulcer on the penis. One month ago throat and mouth became sore and at this time he noticed a faint skin eruption. At present he has several mucous patches and anal condylomata. Clinical diagnosis syphilis. Smears from mucous patches showed many spirochaeta pallida.

CASE VIII. Male; infant, three months old. Two weeks ago skin eruption appeared. The child is thin, anemic and poorly nourished. Examination shows a general macular eruption on body with papular eruption on palms and soles of feet. Abdomen enlarged. Clinical diagnosis, congenital syphilis. Examination of smears from skin lesions were negative. In this case I examined twenty slides taken from arms, body and legs.

CASE IX. Female; age, twenty. Ten days ago a small sore appeared on the middle of the lower lip. Since then it has increased in size and is now 8 mm. in diameter. It is an indurated, somewhat elevated ulcer. Under the angle of the left jaw is a hard, tender swelling the size of a large marble. Clinical diagnosis, ulcer of lip with septic gland. Smears were taken from the ulcer and were negative, although many slides were examined. One week later a second examination was negative.

CASE X. Female; age, twenty-three. Fourteen months ago was treated in the Out-Patient Department for multiple chancrels. Examination at that time showed the bacillus of Dancery. Five days ago she came again to the hospital with an ulcer on the upper lip which is in the median line, covered with a scab with a fissure in the center. Examination showed the post-occipital glands enlarged on each side. The pharynx is red and there are patches on the anterior pillars. Three weeks ago had a sore on the finger which has since healed. Complaints of severe headaches, general pains. She has been married one year, and two months ago gave birth to a child which is now said to be dying from consumption. Thus far I have been unable to obtain the child for observation and material. Clinical diagnosis, syphilis.

Examination of smears from the lip showed many spirochaeta pallida. (See plate.)

In this case the diagnosis was doubtful clinically. The value of a quick method of staining the spirochaeta pallida was well demonstrated in this case as a diagnostic measure.

CASE XI. Female; age, forty-two. Has been under treatment for syphilis for the past year. At times she has neglected carrying out the treatment. Fifteen months ago a gummatous nodule appeared on the upper anterior surface of the tongue. At the present time it is still present as an elevated hard area about the size of a quarter. Clinical diagnosis, gumma of tongue. Microscopic examination of smears from the surface and center of the gumma failed to show any spirochaeta pallida.

CASE XII. Male; age, twenty-three. Sore throat for three weeks. Macular papular eruption on forearm and palm. Remained indurated on prepuce. Enlarged epitrochlear glands. Tender enlarged. Several large inguinal mucous patches. Clinical diagnosis, syphilis. Smears taken from mucous patches show many spirochaeta pallida.

CASE XIII. Male; age, twenty-four. Has had a sore on the upper medial surface of penis 14 mm. in diameter, slightly indurated. The center is covered with necrotic granulation tissue, the edges clean cut,

There is an eruption on the body suggesting scabies. Clinical diagnosis, scabies, and diagnosis of ulcer deferred. Several smears were examined for the spirochaeta pallida, but all were negative.

CASE XIV. Female; age, twenty-three. Three months ago red pimples appeared on a portion of the interior aspect lower part of right leg. They enlarged in size and ulcerated and were followed by others of the same description. Otherwise well. Gives no venereal history. Clinical diagnosis, ulcers of leg. Smears were taken from the ulcers and showed many bacteria, but no spirochaeta pallida.

CASE XV. Male; age, twenty-five. Ten months ago sore on penis six weeks after last coitus, disappeared with cauterization. No rash. Three months ago three small sores on scrotum. Five days ago shifting pains followed by a lumpy petechial eruption, more or less over the entire body. Gums and tongue swollen. Physical examination: Glands in neck and groin. Penis gangrenous. Line of demarcation formed 8 cm. from pubes. The clinical diagnosis in this case is doubtful. The patient had a severe general infection but is now recovering under anti-specific treatment. Smears from granulating wound of penis were negative.

CASE XVI. Male; age, twenty. Has had trouble with penis for two weeks. Typical induration. Area on prepuce with porky roll. No ulceration. No other objective symptom. The patient does not speak English and it was not possible to obtain an accurate history. Clinical diagnosis, syphilis (?) Several smears were taken from sclerosed area and no spirochaeta were found.

CASE XVII. Male; age, twenty-eight. Sore on penis seven weeks ago coming on three weeks after coitus. At present time an indurated area on under side of corona with a granulating patch in the center. There is a generalized macular eruption over chest and back. The inguinal, post-occipital and epitrochlear glands are enlarged. There are mucous patches in the mouth. Clinical diagnosis, syphilis. Microscopic examination of smears shows several spirochaeta pallida in ulcer of penis and many more in the mucous patches.

CASE XVIII. Female; age, twenty-three. Has large swelling on upper lip which started four months ago like a cold sore. Picked it with a pin and it began to swell. Has not been painful. It is not as large now as it was three months ago and has been decreasing in size daily. The under surface of the tongue is furrowed and has patches. The lesion on the lip is 1.5 cm. in diameter, hard and is covered by thin mucous membrane. Vaginal examination: Hymen intact. Condylomata on vulva. Clinical diagnosis, syphilis. Primary lesion of lip. Smears from lip and tongue lesions show many spirochetes pallida.

Summarizing the observations made in these cases, I found the presence or absence of the *Spirochaeta pallida* to be as follows:

| | | SPIROCHAETA PALLIDA. | |
|---|------------------|----------------------|---------|
| | | Present. | Absent. |
| Clinical Diagnosis— Syphilis | Chancres, | 4 cases | 1 case |
| | Mucous patches, | 6 " | 0 cases |
| | Skin lesions, | 2 " | 3 " |
| | Blood, | 0 " | 4 " |
| | Gumma of tongue, | 0 " | 1 case |
| Clinical Diagnosis, Lesion of Non- Syphilitic Origin or Doubtful | | 0 cases | 6 case |

It is evident from these facts that the *Spirochaeta pallida* was present in the first group of cases constantly in the chancres and mucous

patches. In these cases the clinical diagnosis of syphilis was clear. In the chancre where I failed to find the organism the sore had completely healed. The failure to find them in the blood in view of the observations of others, is undoubtedly due to faulty technique on my part. In the six cases of the second group the clinical diagnoses were doubtful or other than syphilis. In these cases careful searching failed to show the *Spirochaeta pallida*, although the *Spirochaeta refringens* was frequently seen.

Conclusion. — From my observations I believe that the constant occurrence of the *Spirochaeta pallida* in typical syphilitic lesions indicates, first, that it is the organism which causes syphilis.

Second, that by method of staining which I have described in ulcers of the penis, an early diagnosis can be made without waiting for the appearance of secondary symptoms. This is a great advantage, because the treatment can be commenced before a general systemic infection has taken place.

Third, that the presence of large numbers of *Spirochaeta pallida* (in one case fifteen in one field) in mucous patches bears out well the known clinical fact as to the infectiousness of mucous patches.

DESCRIPTION OF PLATES.

The first and third microphotographs shown in the accompanying plates show two *Spirochaeta pallida*, one from a chancre and the other from a mucous patch where syphilis was acquired over one year before.

The second plate shows the *Spirochaeta refringens*. The excursion of the curves are longer and fewer in number than in the pallida. It can also be seen that the diameter of the refringens is slightly greater.

A CASE OF CONGENITAL OCCLUSION OF THE SMALL INTESTINE. OPERATION. AUTOPSY.

BY LINCOLN DAVIS, M.D.,

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AND

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ON account of its comparative rarity and the problems involved in its pathogenesis, this case seems worthy of record.

Clinical History. — On Dec. 11, 1905, about 6 P.M., an infant twenty-six hours old, with a history of having passed nothing by rectum since birth, and of having vomited dark greenish material quite constantly during the last few hours, was seen in the accident ward of the Massachusetts General Hospital.

The baby had been sent to the hospital by Dr. D. J. O'Shea, of East Boston, with the diagnosis of intestinal obstruction. It was afterwards learned from Dr. O'Shea that the birth was in every way normal. The parents were well and strong. No history of tuberculosis or specific disease. There had been five other children in the family, one of whom died in infancy of marasmus, the others are living and well. This baby was born at full term at 4 P.M., on Dec. 10, and nothing was noticed to be wrong with him until the next morning, when there had been no movement of the bowels, and vomiting began.

Examination at the hospital showed a well-developed male infant without external malformation. The heart action was quite rapid. The abdomen was greatly distended and tense, presenting two distinct transverse bulgings and a sulcus between, across which peristaltic waves periodically passed. The abdomen was generally tympanic. Nothing in the way of a tumor was to be felt. A soft catheter was passed without difficulty into the rectum for a distance of three inches; repeated injections of warm water failed, however, to bring away any fecal matter.

The history of complete obstipation, the vomiting of matter resembling meconium, together with the signs of abdominal distention and visible peristalsis, made the diagnosis of intestinal obstruction seem certain. The nature of the obstruction, however, was not conjectured.

Operation.—An operation was decided upon and, under ether, an incision to the right of the median line made through the abdominal wall. Upon opening the peritoneal cavity, greatly distended small intestine popped out, an adhesion partially constricting a coil of distended intestine was freed; the gut which was much distended beyond this point, was followed down and found to end in a free blind sac. Continuing the exploration a mass was felt in the right flank adherent to the lower edge of the liver. When this was lifted up into view, it was seen to be composed of fine coils of undeveloped intestine held together by adhesions, and resembled closely a mass of earth worms. This mass was dropped back, and the greatly distended upper segment of intestine was tapped with a trocar, with the evacuation of a considerable amount of gas and semi-fluid greenish material. The blind end of the intestine was then sutured into the wound and the opening in the gut enlarged.

The baby stood the operation fairly well. There was very little fecal discharge from the artificial anus, but some oozing of blood. Attempts to give salt solutions by rectum were unsuccessful; after one rectal injection a stringy white cast was passed. There was occasional vomiting. The baby gradually failed and died twenty-four hours after the operation.

Autopsy.—Permission was obtained for a post-mortem examination and the following conditions were found to be present:

The body is that of a male infant, forty-eight hours of age, 45.5 cm. long, well-developed, fairly nourished. Head. Not examined.

Trunk: The thoracic viscera and cavities on section are normal.

On the right side of the abdominal wall there is a linear wound 5.5 cm. in length closed with sutures.

The peritoneal cavity is free from fluid. The serosa of the intestines near the wound of operation is blackish red in color and shows here and there a slight amount of grayish soft exudate. In one or two places the coils of the small intestine are slightly glued together by grayish soft exudate. In what is apparently a free blind end of the small intestine there is a surgically opening. The base of the umbilicus is normal.

The liver, stomach, pancreas, spleen, kidneys and adrenals on section are normal in appearance and have the normal anatomical relations. The duodenum is distended, but otherwise is normal in appearance. Bile flows from the duodenal papilla on pressure of the gall bladder. The gall bladder is normal in appearance and free from stones. The duodenum measures in circumference 4 cm. and is continued as the jejunum with normal anatomical relations. Of this portion of

the small intestine there is present, however, only a distended portion of the tube measuring about 46 cm. in length, and varying in circumference from 4.5 cm. to 7 cm. The mucosa shows strikingly well-marked rugae more prominent towards the distal end of the tube. The contents of this part of the intestine consists of a soft dark greenish-brown material. The portion of the jejunum present ends blindly and shows in its free blind end the surgical opening previously referred to. It is supported by a crescentic flap of mesentery which averages about 2 cm. in width and which springs from the usual situation of the root of the mesentery. The margin of the mesentery away from the intestine is free, smooth and rounded and in several places in it small lymphatic gland-like bodies are visible.

The rectum, sigmoid flexure, descending colon, splenic flexure, transverse colon and hepatic flexure have their normal anatomical relations and on section show no lesions of the mucosa. The large intestine contains a considerable amount of pale, gelatinous, mucous-like material and measures in circumference from 1.5 cm. to 2 cm. In the situation of the hepatic flexure the colon turns down and reaches to a point at the level of the lower pole of the right kidney at which point there is a small pouch-like dilatation. From this portion of the colon a smaller tube continues, extending upward and over across the ascending colon where, just to the right of this and a little above the distended pouch-like portion of the colon, it is lost in what is apparently a complicated coil of intestine. This knot-like mass of intestine, which measures 2 cm. by 1.5 cm. by 1 cm. is bound by fibrous tendon-like adhesions to the inferior surface and lower margin of the right lobe of the liver and to the peritoneum over the perinephric tissues in the region of the lower pole of the right kidney anteriorly. Where the small portion of intestine continues from and over the ascending colon there is a short prolongation along it of the mesentery from its root. On unravelling the complicated coil of intestine it is found to be made up of a length of the lower end of the ileum about 45 cm. long. This portion of the small intestine ends blindly in the coil and the other end joins the pouch-like portion of the ascending colon, which is in the situation of the cecum, with the same anatomical relations that it has in the adult. On section the ileocecal valve has its normal relations. Springing from the base of the pouch-like portion of the ascending colon or cecum there is an appendix-like organ the distal half of which is bound by fibrous-like tissue along and to the ileum. This appendix-like tube measures about 1 cm. in length and averages about 3 mm. in diameter. Water passes through the large intestine until it reaches the cecum where it passes into and distends the appendix. The water also passes into the small intestine over a length of about 1 cm. above the ileocecal valve. Here the small intestine is constricted and occluded by fibrous-like tissue. From this point on the portion of ileum present is more or less constricted at irregular intervals by fibrous-like connective tissue which broadens out in places into a membranous-like band which is inserted all along the wall of the ileum similar to the insertion of the mesentery in the wall of the ileum in the adult. The ileum is quite small, being about 4 mm. in diameter in its largest portion. About 5 cm. above the ileocecal valve there is a small mass of tissue which measures 1 cm. by 5 mm. by 3 mm. and is attached to the wall of the ileum by fibrous tissue. The mass is possibly gland tissue or a small piece of the ileum separated in uncoiling the knot of intestine. A piece is put away for microscopic examination. On section of the small intestine where possible, no lesion is

are made out, but there is in portions of its lumen a slight amount of yellowish, soft, mushy material.

There is no good evidence of the presence of a Meckel's diverticulum anywhere along the course of the small intestine.

The ureters, bladder, prostate and testes are normal in appearance and have their usual anatomical relations.

Microscopical examination of one of the mesenteric lymphatic glands and of the small mass of tissue attached to the ileum shows nothing remarkable. The mass is regarded as being a small portion of the ileum separated off in untangling the coil of intestine.

From the above findings the case is clearly one of congenital malformation of the small intestine with complete interruption in the continuity of the intestinal tube and consequent intestinal obstruction.

Occurrence. — A somewhat limited review of the literature of this subject reveals quite a collection of recorded cases of congenital abnormalities of the upper intestinal tract. These abnormalities vary in degree from stenosis and stricture to complete obliteration and severance of the alimentary canal. In some cases the blind ends of the gut are connected by an impervious fibrous cord; more rarely, as in our case, there is no connection between the two ends. A few cases have been reported where a segment of the bowel has been actually missing. These malformations are often multiple and in some cases are accompanied by other congenital defects, such as umbilical or inguinal hernia, atresia of the anus, hypospadias, etc.

The most common site for congenital intestinal atresia, excluding, of course, the rectum and anus, is in the vicinity of the ileum or at least within the primitive intestinal loop, and next in frequency in the duodenum. The form of defect illustrated by this case, that is, complete severance of the canal without connection of the blind ends, although reported in a few instances in the duodenum, is much commoner in the lower jejunum and ileum.

Gaertner, in 1883, collected 64 cases of stenosis or atresia of the small intestine. There were 27 in which the intestine had a blind ending, though in some of these the ends of the gut were connected by an impervious cord. Of these 27, 9 were in the duodenum, and 16 in that portion of the intestine corresponding to the primitive loop.

Since then quite a number of additional cases have been reported by various observers, and cases identical to ours have been reported by Lillienfeld and Archambault.

Braun, in 1902, collected 25 cases of congenital occlusion of the ileum or jejunum which were operated upon, all with fatal results. In one case there was survival for fifteen days after the operation. There have been a few operated cases reported since then with a like result.

Pathogenesis. — As to the cause of congenital occlusion of the upper intestinal tract, many theories have been advanced and some striking cases cited in their support. Probably no one theory can explain all the cases.

The most prominent theories are that these defects are due to the results (1) of fetal peri-

tonitis; (2) of volvulus; (3) of compression or snaring of a portion of the gut by the closure of the cavity of the umbilical cord.

The latter theory was first elaborated by Ahlfeld, in 1873, who ascribed such defects to an abnormal persistence of the vitelline duct, whereby the loop of intestine which in the course of development enters the cavity of the umbilical cord, is prevented from returning to the abdominal cavity at the proper time, which results in its being pinched or snared off, as the case may be, by the closure of the abdominal walls. This theory accounts for those cases in which a segment of the intestine is entirely lacking. By an ingenious elaboration of the same theory, Ahlfeld includes atresia of the rectum and anus as secondary results of the undue persistence of the vitelline duct due to traction on the intestine. He records a case which seems to confirm his theory, and similar cases have been reported by others, notably by Clogg. This theory has, on the whole, been quite generally accepted.

That volvulus within the abdominal cavity during fetal life may result in atresia cannot be denied, and that this result may even take place in adult life under peculiar conditions seems to be shown by the remarkable case reported by Hädlich.

That other causes also may be productive of these defects seems to be shown by scattered reports of cases in which invagination of the intestine, disease of the mucosa, or the pressure of a tumor have been the causative factors.

The conditions found in the case here reported are most satisfactorily explained by a strangulation of a portion of the intestine, together with its mesentery, which resulted in a complete severance at one point, and an atrophy and non-development of that portion which had been partially deprived of its mesenteric blood supply. It is evident from the absence of bile-stained matter within the intestine below the site of occlusion, that the lesion occurred early in fetal life before the establishment of biliary secretion, that is, before the end of the third month. The remarkable changes in position of the primitive loop of intestine at about this same period in connection with its migration into the cavity of the umbilical cord, and its withdrawal therefrom, would seem to offer a most favorable opportunity for such strangulation. This seems to us the most plausible theory by which to explain the conditions found in this case. The adhesions and enlargement of the mesenteric glands may be fairly considered as the result of inflammatory reaction due to the strangulation.

Treatment. — As to the treatment of this well-nigh hopeless condition, the formation of an artificial anus seems the only solution. An intestinal anastomosis between the dilated portion alone, and the shrunken gut below the occlusion, offers insurmountable technical difficulties. Braun makes a very good suggestion in proposing to bring out both blind ends of the intestine through the wound; this would allow of forcible dilatation of the distal segment by means of

injections from above, and the performance of an intestinal suture outside the abdominal wall at a later date if occasion offered. A suggestion of J. W. Elliot for maintaining nutrition in cases

incision in the neck, on the right, and was freed from the bodies of the vertebrae. An exostosis as large as an orange seed was removed from the body of what seemed like the sixth or seventh cervical vertebra. Further on in the bodies of the vertebrae a tumor was

arthritic deposit, and not. A probing was done about one and a half inch with the finger in the esophagus at this point on the left and the chest and the bodies of the vertebrae to the sternal notch, about one and a half inch on two sides.

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CONGENITAL OCCLUSION. DAVIS AND RICHARDSON.



FIG. 1.—The esophagus with the first portion dilated, a view of the liver and the free surface of the liver.

Attached to the liver and the first portion of the esophagus is a small, rounded, and shrunken mass of the liver, which is the liver. A little to the left and below the liver is a small, rounded, and shrunken mass of the liver, which is the liver. A little to the left and below the liver is a small, rounded, and shrunken mass of the liver, which is the liver.

FIG. 2.—A view of the esophagus with the first portion dilated, a view of the liver and the free surface of the liver.

of the esophagus. A small probe, the size of a lead, which passed to the first part of the esophagus, was introduced into the esophagus with the esophagus to the left of the body of the esophagus. No attempt was made to pass the probe into the stomach and some distance into the stomach. The esophagus was exposed by a long, wooden probe to guide it from

are made out, but there is in portions of its lumen a slight amount of yellowish, soft, mushy material.

There is no good evidence of the presence of a Meckel's diverticulum anywhere along the course of the small intestine.

The ureters, bladder, and associated structures are in appearance and position normal.

Microscopical examination shows that the lymphatic glands attached to the ileum are separated off in units.

From the above it is evident that the congenital malformation is a complete interruption of the intestinal tube and consists of:

Occurrence.—A review of the literature of this subject shows that there are a number of recorded cases of congenital atresia of the upper intestinal tract, varying in degree from simple stenosis to complete obliteration and absence of the canal. In some cases the atresia is connected by a narrow band more rarely, as in the case reported here, by a complete interruption between the two segments. It is reported where a single atresia is actually missing. It is also reported multiple and in some cases associated with other congenital malformations, such as inguinal hernia, hydrocephalus, etc.

The most common form of congenital atresia, exclusive of the duodenum and anus, is in the ileum. The next in frequency is atresia of the jejunum. The defect illustrated in this case is a complete severance of the intestinal tube at the blind ends, a condition which has been reported in the duodenum and the lower jejunum.

Gaertner, in 1881, reported a case of atresia of the small intestine in which the intestine was found to be connected by an imperforate membrane. He was in the duodenum and the intestine connected by a band.

Since then quite a number of cases have been reported which are identical to the case of Lillienfeld and Braun.

Braun, in 1902, reported a case of complete occlusion of the small intestine which was operated upon, a case in which there was no connection between the two segments. There are several other cases reported since.

Pathogenesis.—Theories have been advanced to explain the occlusion of the small intestine.

Probably no one theory can explain all the cases. The most prominent theories are that these defects are due to the results (1) of fetal peri-

tonitis; (2) of volvulus; (3) of compression or snaring of a portion of the gut by the closure of the cavity of the umbilical cord.

The latter theory was first elaborated by Ahlfeld in 1872, who ascribed such defects to

Braun makes a very good suggestion in proposing to bring out both blind ends of the intestine through the wound; this would allow of forcible dilatation of the distal segment by means of

injections from above, and the performance of an intestinal suture outside the abdominal wall at a later date if occasion offered. A suggestion of J. W. Elliot for maintaining nutrition in cases of fistula high up in the intestinal tract by catching the intestinal contents from the afferent segment and injecting them into the efferent, would seem particularly applicable to such cases.

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 Lenzfeldt: Zur Casuistik der angeborenen Missbildungen des Dünndarms. Deutsche Zeitsch. f. Chirurgie, 1901, 130, 617.
 The articles of Braun and Clogg contain excellent tabulographies.

- I. RESECTION OF COLON FOR OBSTRUCTION BY A MALIGNANT ADENOMA.
- II. EPITHELIOMA OF THE ESOPHAGUS. EXTENSION.
- III. SHOULDER GIRDLE AMPUTATION FOR CARCINOMA OF THE AXILLA.
- IV. TRAUMATIC CYST OF THE PANCREAS.

BY F. B. HARRINGTON, M.D.

CASE I. B. H., male. Three months before entering the hospital, this man, thirty years of age, had a severe attack of nausea and vomiting with distention of the abdomen lasting several days. Since then there have been signs of chronic obstruction of a mild degree until six days before entrance, when another attack of almost complete obstruction came on. When seen the patient was distended and tympanitic all over the abdomen.

No cause for the obstruction could be made out. Incision in the middle line below the umbilicus showed the small and large intestines distended as far as the hepatic flexure of the colon, where a mass as large as a lemon could be felt. This was evidently the point of obstruction.

A Muxter tube was inserted in the ileum about eight to ten inches from the cecum; the patient was at once relieved and rapidly improved.

A week later, after the distention had subsided, the colon at the hepatic flexure was resected, removing the tumor, and a large segmented ring used to unite the cut ends. The segments came away on the fifth day with a rectal movement. The median fecal fistula closed itself in a little over four weeks.

Pathological report. Malignant adenoma.

Resection and anastomosis of the large intestine should never be attempted in the presence of great distention.

CASE II. Miss C., age, forty years. For two and a half months patient had been unable to swallow solid food. When sent to the hospital by a small amount of liquid food could be swallowed. The new esophageal regurgitation. A solid mass could be felt in the pharynx attached to the bodies of the fourth, fifth, and sixth cervical vertebrae, diminishing the size of the pharynx, especially on the right side, and crowding the opening of the esophagus. A small probe, the size of a lead pencil, was introduced into the esophagus with difficulty. No attempt was made to pass the probe into the stomach. The esophagus was exposed by a long

incision in the neck, on the right, and was freed from the bodies of the vertebrae. An exostosis as large as an orange seed was removed from the body of what seemed like the sixth or seventh cervical vertebra. Higher up on the bodies of the vertebrae a tumor was felt, which proved to be an osteo-arthritis deposit, and which caused the pharyngeal tumor. A probing was inserted into the esophagus to a point about one and a half inches above the sternum when it could be moved no farther. It was then possible with the finger in the incision to detect a tumor in the esophagus at this point. An incision was made on the left and the esophagus separated from the trachea and the bodies of the vertebrae as low down as the sternal notch. The tumor was excised with about one and a half inches of the esophagus, the opening on two sides rendering manipulation easy.

Pathological report.— "A new growth involving the whole of the esophagus about 3 cm. in length causing almost complete constriction and measuring about 1 cm. in greatest thickness.

"Microscopic examination showed solid masses of flat epithelial cells infiltrating the tissue in all directions. In many of these masses there were indurated horny whorls.

"Diagnosis: Epithelioma."

The esophageal end, opening into the pharynx, was closed by a purse-string suture of chronic gut. It closed the pharynx from the wound and there was never any leakage. The lower end of the esophagus was attached to a flap of the skin through half of its circumference. A rubber tube was inserted well into the esophagus through which the patient was fed. Convalescence uneventful. The patient has gained ten to twelve pounds. She feeds herself through the tube with little difficulty.

CASE III. W. H. L., fifty years old, male. In October an attempt was made to clean up a shagging tumor of the axilla which involved the vessels and nerves. This operation was followed by partial relief, but the farther development of the disease caused great swelling of the hand and forearm and great distress from pressure on the nerves. The only procedure which offered any relief from pain was complete removal of the arm with the shoulder blade and collar bone. The clavicle was disarticulated and the blood supply of the shoulder was cut off at the thyroid axis. The thyroid axis consisted of but two vessels, the inferior thyroid and the transverse costal arteries, the supra-scapular artery arising directly from the subclavian artery. These were tied and the subclavian was tied in its third part. The brachial plexus was injected with a cocaine solution before amputating. There was no shock. Whether this was due to the absence of loss of blood or to the use of the cocaine, I am not certain. I believe that the freedom from blood loss was the result of cocaine.

The patient, as a reward, has made an excellent recovery. The shoulder directly involved the artery costal axis, so that it had to be removed. The new attachment of the axilla was made by a graft from the latissimus muscle.

Microscopic examination showed a growth of a slightly elongated epithelial cells with a tendency to extreme anastomosis.

"Diagnosis: Carcinoma."

CASE IV. S. D., age, forty-two, male. W. H. L. who had been a week past eating solid food, was brought to the hospital with a tumor of the neck, the size of a lead pencil, which was found to be a carcinoma. The tumor was removed, and the esophagus was exposed by a long incision in the neck, on the right, and was freed from the bodies of the vertebrae. An exostosis as large as an orange seed was removed from the body of what seemed like the sixth or seventh cervical vertebra. Higher up on the bodies of the vertebrae a tumor was felt, which proved to be an osteo-arthritis deposit, and which caused the pharyngeal tumor. A probing was inserted into the esophagus to a point about one and a half inches above the sternum when it could be moved no farther. It was then possible with the finger in the incision to detect a tumor in the esophagus at this point. An incision was made on the left and the esophagus separated from the trachea and the bodies of the vertebrae as low down as the sternal notch. The tumor was excised with about one and a half inches of the esophagus, the opening on two sides rendering manipulation easy.

longed outing, he felt much discomfort in the epigastrium and noticed a slight swelling in the middle line above the umbilicus. When seen, six weeks after the accident, there was no tenderness over the swelling and no fever. The patient was referred to me by Dr. Shattuck for operation. The tumor gave a sense of fluctuation and its location suggested connection with the pancreas. An incision through the abdominal wall disclosed the gastro-colic omentum stretched over a fluctuating tumor as large as a large orange. The lesser sac was opened through the gastro-colic omentum. The tumor was tapped and 8 oz. of a slightly turbid, light amber fluid were removed. This fluid was found to be inert, but a subsequent discharge, which was quite active for a time, caused marked excoriation of the skin and was found to change starch into sugar. The edges of the cyst were sewed to the parietal peritoneum and drainage tubes inserted. The discharge of the fluid ceased within a short time. The patient was discharged in three weeks with a small granulating wound.

A CASE OF HYPERNEPHROMA.

BY F. C. SHATTUCK, M.D.

THE following history of a patient in my wards in whom the diagnosis of hypernephroma was made and confirmed by operation, is not without interest.

The patient, a man of thirty-nine, a cook, whose family history, previous history and habits have no bearing upon the case, entered the Massachusetts General Hospital in December, 1905.

Eight months ago, in May, while preparing for bed, he noticed that the right side of his abdomen felt hard; there had, up to this time, been no impairment in health, nor was there until August, four months later. At this time he began to have a dragging pain in the right side of the abdomen, not constant, not keeping him awake at night, but on account of the increasing size of his abdomen he had to let out the waist band of his trousers. His work began to bother him and he lost his ambition. His condition remained as above described, except for the steadily increasing size of the mass in the right side of the abdomen, until ten days before entrance to the hospital, when he was seized with a sharp, knife-like pain in the region of the tumor, the pain often shooting down the right leg. He had to stop work the pain was so severe. For five days the pain was almost constant, then gradually became less severe. During the past five months he has lost seventeen pounds in weight. There has been no hematuria.

At the time of entrance to the hospital, he was well developed, but somewhat emaciated. Temperature, 98.4; pulse, 100; respiration, 27. The examination of the heart and lungs was negative. There were a few palpable glands in the axillae and groins. Of especial interest was the examination of the abdomen. There was bulging in the right flank and the whole right side of the abdomen was dull upon percussion; there was also slight tenderness in this region. Extending from the right costal border to just above Poupart's ligament was a tumor mass, fairly smooth, irregular in outline. It extended to the median line above the umbilicus, while below it reached to four inches beyond. The tumor descended but slightly with inspiration, and the lower portion was traversed by the inflated colon.

Blood examination: Hemoglobin, 60%; red cells, 3,628,000; white cells, 6,400. Stained specimens showed nothing except a moderate secondary anemia.

Urine examination: Normal, acid; S. G., 1.018; slightest possible trace of albumin. The sediment

consists of a few red blood corpuscles and a few leucocytes; no casts seen. Cystoscopic examination, by Dr. Balch, showed a normal bladder wall, some enlarged veins about the right ureteral orifice; left ureteral orifice normal. Catheterization of ureters unsuccessful.

During his stay of two weeks in the hospital, the tumor increased considerably in size. He was seen in consultation by Dr. Harrington and operation advised. The right kidney was found to be replaced by the large tumor mass extending into the ureter and the entire growth was removed; the patient has made an uninterrupted convalescence. Pathological examination of the tumor showed it to be a perithelioma or hypernephroma.

OPERATION BY DR. F. B. HARRINGTON.

I was asked to see the case with Dr. Shattuck and agreed with him that an operation was desirable. I felt that the tumor was cystic, the sense of fluctuation being so perfect. In this I was in error, Dr. Shattuck being correct in his diagnosis. The greatest difficulty about the removal was to avoid tearing the renal artery and vein in the effort to tie off these vessels. The size and weight of the tumor was such that it was difficult to approach the vessels. On the removal of a flexible clamp I found the edge of the vena cava had been included in it, when the renal vein was clamped, there being distinct marks upon a portion of its circumference. This, however, caused no trouble, the patient making a rapid and steady convalescence. The ureter was removed with the tumor as low down as the brim of the pelvis. Its lumen for one half of its length was filled with a soft mass of disease.

Pathological report.—"The kidney was replaced by a lobulated mass of new growth, 25cm. in diameter on section, showing a yellow mass with a yellow opaque necrotic mass with the exception of the edge in places where there was a little medullary tissue. The pelvis was dilated and there was a tumor mass present in the ureter. Microscopic examination showed large, round cells separated by a stroma of connective tissue. Hypernephroma."

A CASE OF AMPUTATION AT THE SHOULDER JOINT FOR INFECTION WITH WELCH'S GAS-PRODUCING BACILLUS. RECOVERY.

BY E. A. CODMAN, M.D.

THE patient is an Italian. He was brought to the accident room in the night, seven weeks ago. Five hours before he had had his left arm caught in a revolving fan. He was seen by Dr. Plympton of Norwood, who partially cleaned up his wounds and sent him to the hospital. When he arrived his condition was so bad that Dr. Graves, the senior house officer, felt that any interference with the wounds which Dr. Plympton had partially sewed up would be fatal. There were compound fractures of the humerus and both bones of the forearm and numerous lacerated skin wounds. The wounds were irrigated superficially, splints applied and the patient left on the shock-table all night. During the next day he rallied, but it was decided to wait another day before attempting operation.

On the second day the crepitus of subcutaneous emphysema was noted over the whole arm and over the left side of the chest and neck. The forearm was obviously becoming gangrenous. He was seen by Dr. Harrington and the probability of infection with Welch's gas-producing bacillus considered. His general condition was very bad and a quick amputation was decided on. I amputated at the shoulder joint under light etherization and cocaineization of the brachial plexus. The wound was partially sutured and packed. The divided tissues were apparently healthy

except that they were distended with gas which escaped at times with a distinct sizzling noise as the knife passed along. A culture taken from the incision was negative.

For the following three days his condition was very critical, the emphysema persisting to a certain extent in the neck, chest and shoulder. On the third day I made an incision without any anesthetic about six inches long over the blade of the scapula at a point where the crepitus was greatest. I opened into a pocket of necrotic tissue and found the great muscles of the back distended by a very foul-smelling gas.



Although the patient had no ether I began pulling out of the wound great pieces of gangrenous muscle with occasional bits of scapula and ribs. I washed the wound out with carbolic 1-10 and packed it with gauze soaked in carbolic.

Since that time his condition has slowly improved and the wound will soon be ready for secondary suture.

Some idea of the condition of the arm and chest before amputation may be obtained from this photograph. The following is Dr. Richardson's report of the bacteriological examination of the amputated arm.



MASSACHUSETTS GENERAL HOSPITAL, CLINIC AND
PATHOLOGICAL LABORATORY.

Dec. 19, 1905.

BACTERIOLOGICAL EXAMINATION.—Shoulder tissues. Coverglass examination shows no bacteria and the cultures no growth.

The amputated arm was enormously swollen, necrotic, and the tissues yielded on section a large amount of foul fluid containing many gas bubbles.

Coverglass examination from the tissue of the upper part of the arm shows a few bacilli, morphologically like the *Bacillus aerogenes capsulatus*.

Coverglass examination of the tissues a little lower down shows great numbers of bacteria among which are bacilli like the *B. aerogenes capsulatus*.

Many cultures were made, but owing to the great numbers of other bacteria present, pure cultures were not obtained.

The glucose agar culture, however, showed the marked disintegration of the medium with forcing out of the tube plug due to the large amount of gas formed and which is characteristic of the presence of the *Bacillus aerogenes capsulatus* in this medium. Welch's test of inoculating a guinea pig by the introduction of the material into a vein and shortly after killing the animal and placing it in the thermostat over night was also done. The pig became enormously swollen, the skin being broken through in several places and the abdominal and thoracic viscera were disintegrated, necrotic and of the consistency of rotten sponge. The tissues yielded a foul fluid containing gas bubbles. This condition of the tissues is characteristic of the presence of the *Bacillus aerogenes capsulatus*.

Although a pure culture of the bacillus was not obtained it is considered from the above tests that the *Bacillus aerogenes capsulatus* was present in the tissues of the arm in association with great numbers of other bacteria and that the marked necrotic and emphysematous character of the lesion was due to its presence.

REMOVAL OF A CLASP PIN FROM THE RIGHT BRONCHUS AND A HAIRPIN FROM THE BLADDER

I want to show two foreign bodies which I removed about a month ago.

The first is a clasp pin which had been inhaled into the right bronchus of a girl nine months old. I removed this by Dr. Goodidge's method of introducing a urethroscope through a tracheotomy wound with the patient in Ross's position. With a head mirror it was easy to look through the urethroscope and see the pin in the bronchus and to grasp it with alligator forceps. It seems to me that Dr. Goodidge is greatly to be congratulated on discovering this simple method, and every surgeon ought to know about it.

The hairpin was removed from the bladder of a woman and was a much more difficult matter. The hairpin had been introduced by her husband, for what purpose we do not know. I first examined with a cystoscope and located the exact position of the pin. I could see that the points were sticking into the mucous membrane of the bladder in the left lateral orifice and that the axis of the pin pointed upward and to the right. After observing the exact plane of the pin I carefully removed the cystoscope and introduced a small lithotrite in the median line. I passed the lithotrite backward along the base of the bladder with its beak upward. I then lowered the jaws and rotated the beak to the left, as far as the base of the left lateral orifice where I knew the point of the pin was, and closed the jaws. I was fortunate enough to catch it by the tip, but not by the first time and to remove it with ease.

A. M. EASTMAN, HOPKINS CLINIC.

RECEIVED DEC. 20, 1905.

The patient, a girl, presented a large swelling at the upper end of the humerus. There was no pain or inflammation of the humerus. The swelling was

ances were those of sarcoma. Amputation of the upper extremity was performed. Microscopical examination discovered the growth to be a hypernephroma. Examination of the abdomen found a palpable and slightly movable left kidney. There had never been any signs or symptoms associated with the kidney in this case.

The case is instructive in that the bone metastasis was the first sign of the hypernephroma. In view of the fact that two cases of hypernephroma have been recorded in which solitary bone metastasis had taken place, the question arises. May not the bone metastasis in the case reported be solitary, and if so, is not a nephrectomy now permissible and advisable?

Reports of Societies.

AMERICAN ACADEMY OF MEDICINE.

The thirtieth annual meeting, held in Chicago, Nov. 9 and 10, 1905, with the President, DR. WINFIELD S. HALL, Chicago, in the chair.

REPORT OF THE COMMITTEE ON LAWS REGULATING THE PRACTICE OF MEDICINE.

This report was read by the Secretary, DR. CHARLES MCINTIRE, Easton, Penn.

The Academy began the study of laws relating to the practice of medicine in 1880, and the report gave some of the results of this twenty-five years' investigation. Some of the imperfections of the laws were considered. (1) The lack of uniformity in common with most legislation. In time this might be corrected. (2) The relation of vagarious practitioners. Each state by special legislation, by exemption in general legislation, or by sufferance, permitted certain classes of people to perform the office of a physician without the tests required by the state for doctors in medicine. The report suggested that the general practice acts should recognize this by providing for two classes. One to be known as "Limited Licentiates in Medicine," who would be examined only on the elementary subjects. As these laws were to protect the people, they should not take cognizance of any special system. Each one should have liberty to treat disease after his own sweet will, but only after he had demonstrated to the state officials that he possessed such knowledge of the human brain as the legislature had decided is necessary for the proper protection of the citizens. (3) Another imperfection of the laws of to-day was that they do not accept the statement of the medical college as final. This had been thought to have been necessary because some medical schools had been found not to have acted in good faith. The result was a somewhat mechanical statement of requirements. Time would right this, and the future laws would accept a diploma without going behind the returns. (4) Another weakness was the provisions for the transfer of a legal practitioner from one state to another. The report suggested that authority be given to each board to accept the license of another state at its value and to make such additional tests as might be required. (5) The laws too frequently failed to protect those who were licensed. They should provide for some official whose duty it was to search out and prosecute the unlicensed and those who were abusing their licenses. The report favored having osteopaths represented on State Medical Examining Boards.

DISCUSSION.

DR. CARL H. VON KLEIN, Chicago, referred to the gradual evolution that was taking place toward higher medical education, and said he had always been an earnest advocate of it. America was not behind in this progressive movement. In some medical schools the courses of instruction were equal to those established in foreign countries. There was a four-year course in Germany; a six-year course in Russia; an eight-year course in Italy, and all of these courses were different. In America the courses of instruction were almost equal to those in Austria and Germany; but the preliminary education of medical students had not reached as high a standard in this as it had in foreign countries.

DR. LEARTUS CONNOR, Detroit, Mich., called attention to the origin of medical laws, who originated them, and for what purpose. He said there were two parties involved: (1) The people, and (2) the doctors themselves. Doctors could not enact laws themselves, but they had to join with the people in accomplishing this. Doctors, however, had been the prime factors in establishing these laws, sometimes with a selfish purpose in view, he regretted to say. He thought that if doctors had looked disinterestedly after the interests of the people first, rather than their own interests, there would have been no need for any medical laws. While this was a strong statement, it was absolutely true. Physicians should work for the good of the community first, and for themselves secondarily. There should be a community of interest. With this idea in view, medical laws would be efficient, effective, in proportion to the support they received, and without such support they would be weak and ineffective.

DR. B. D. HARRISON, Sault Sainte Marie, Mich., said he could not agree with the recommendation in the report that osteopathy should be admitted as members of state medical examining boards, and be recognized as a part of the medical profession. Physicians could not afford to recognize a fake profession, such as osteopathy was, which was founded upon a fake condition, and was acknowledged to be such by its followers. It was simply suggestion. Three or four years ago he had occasion to inspect a school of osteopathy which held out inducements to graduates from all schools of medicine. He asked the dean many questions, and among them, "Who teaches anatomy in your school?" The dean replied, "Our professor of anatomy is a Rush College graduate." Again, he asked the dean, "Who are the assistant anatomists?" The reply was, "A Homeopath and an Eclectic." All anatomy, descriptive and applied, was taught in this school by these men.

He said that the Supreme Court of Kentucky held that the osteopath was a massmur. It was held by the Supreme Court of another state that osteopathy came within the field of medicine. Physicians had no right in principle to combine with osteopaths and accept them as members of examining boards, nor, in his judgment, had a board any right to have anything whatever to do with osteopaths or with any of the suggestive systems of practice — systems that were founded to "take in" the people. He referred to the Michigan law regarding osteopathy and osteopaths, and said it was only a matter of time when osteopaths would be driven out of that state. He favored letting them alone, as they would work out their own salvation or damnation.

He gave the following legal interpretation of qualifications numbers one and two in the report:

"If an applicant for the reciprocal indorsement of a certificate of medical registration or license had acquired such certificate or license in another state,

territory, district or province of the United States in medical reciprocity with Michigan, under conditions and requirements equivalent at the date of issue to those with which he would have had to comply subsequent to Sept. 22, 1883, in order to have then obtained the legal right to practice medicine and surgery in Michigan, such certificate or license may be recognized and indorsed by this board as a sufficient qualification for reciprocity under Section 3, subdivision third of Act 191 of the Public Acts of 1903, provided such applicant shall further comply with the rules and regulations of this board relative to the recognition and exchange of certificates or licenses between states."

Dr. R. O. BEYER, Minneapolis, Minn., believed that if the standard of the medical profession was raised there would not be need for medical legislation half so much as it was needed now. He was not at all sure but that at the present time, in view of the difficulties standing in the way of obtaining effective legislation for the control of the practice of medicine, the action of the state of Massachusetts was to be preferred to the action of the great majority of states in refusing to enact any law. It was a question of the "survival of the fittest," and he thought it would not be very long, after the medical profession had attained that standard of educational and professional fitness, before the bogus colleges would be relegated to the position of barbers, plumbers, etc.

The legislative side of the question was more difficult to deal with, as physicians were not as expert and successful in securing the enactment of laws as were others who were past-masters in politics.

Dr. JOHN M. DONSON, Chicago, said, urged by the medical profession, some schools had for several years established and arranged their work so as to prepare young men better for the study of medicine. Some institutions of general learning were now pursuing the plan of supplying courses in chemistry, physics, general biology, and others human anatomy, especially microscopic anatomy, bacteriology and embryology.

Prof. JAMES G. NEWMAN, Lake Forest University, Illinois, said it was to be regretted that the Minnesota State Board of Medical Examiners did not stand pat on educational qualifications rather than upon technicalities.

REPORT OF THE COMMITTEE TO TABULATE THE VALUE OF THE FIRST DEGREE.

This report was read by Dr. DONALD C. HAWLEY, Burlington, Vt.

The committee found it necessary to make a prefatory study before attempting the definite work assigned to it. This study included two questions:

(1) What is a college course intended to do? (2) What are the elements, which, when compounded, make the physician?

(1) A college was a factory where the value of the finished product depended upon the character of the raw material furnished. It also depended upon the process employed, but no process would cause a transmutation of metals. Unless the gold be in the ore, none could be found in the end products.

(2) To obtain material upon which to base the answer to this question, a circular letter was sent to a large number of physicians, medical teachers and others and college presidents. The replies received were studied by the committee, and were also included in the report as an appendix. The questions were:

(1) What is the character to be desired of the neophyte in medicine? To what extent can it be developed by educational processes? And what class of studies is adapted to bring it about?

(2) What mental discipline is essential that a student may profitably benefit by a medical course?

(3) What facts should be in possession of the intending medical student before he enters upon his medical studies? Can the acquisition of these facts be used to train the character and the mind?

The report discussed each of these topics in turn. It was admitted that sometimes the man with a limited training outstripped his fellow with greater scholastic advantage. There must be something underlying which educational processes could not supply. The boy or girl must belong to that type designated as "fact-seeker" by President Hadley, of Yale. He must also be self-reliant, able to arrive at fair conclusions on accurate observation, and to follow such conclusions with confidence. He must also have a bulldog tenacity, a love of seeking scientific facts apart from preconceived theories, and sympathy with mankind. These were foundations, and every trait which would make an honorable man and a cultured gentleman would be helpful.

Having boys and girls of this type, what should be the mental discipline to produce the best result? He should be taught to observe accurately and to interpret honestly the results of observation, to know how to study, to think logically, and train his memory to be of ready service. He should be educated first for the man, then for the physician. And, on the whole, the course in colleges leading to the A.B. degree seemed to be fitted for this better than any other course. Besides, the mind so furnished should be in possession of certain facts to be used directly in his medical studies. These included a knowledge of elementary physics, that he might understand its application in physiology and elsewhere; such a knowledge of chemistry as to make it necessary to teach only medical chemistry in a medical course; and general biology, that the student could undertake the study of life processes in man in an intelligent manner.

DISCUSSION.

Professor LEIST, Northwestern University, Chicago, emphasized that part of the report that students preparing for medicine should be advised to elect or to select studies in their college course, so that they might have two or three years of work in chemistry, biology, etc., and that they be advised to take up such subjects as histology, embryology, and comparative anatomy. Some institutions were pursuing such a course at present. He should like to see intending medical students advised to utilize their time, not so much with a further study of the classics, as with a liberal and long enough training to include general biology, comparative anatomy, histology and embryology.

Dr. FRANKLIN CONSON, Detroit, said a four-year course of study in medicine would have a much broader outlook, it would give him in a great measure, looking forward to what he ought to be, more to have a broad sympathy with the whole of those with whom he had to do. The science of the physician reached far beyond pathology, their therapeutic basis. The practice of medicine in a medical course, biology, have done so much to expand and to extend what started back in a body, whether he is a doctor or the best of friends of a doctor, that it is a pity that we have not more of a liberal education. A man can find out more about the world with the others with that background, that scientific character. If one, who had not a mind to be a physician, could stand in an operation, between two men, who had a slant on the book, who had a knowledge of the world. He was a holder of the "equivalent" of a medical degree, a doctor.

DR. CARL H. VON KLEIN, Chicago, pointed out and emphasized the value of an academic training preliminary to entering upon the study of medicine. The man who was academically well trained, other things being equal, made a good physician. A man should not be discouraged because he failed in his first examination, as there were notable instances of men who subsequently became great, yet who failed in their first examination. Among others he instanced Bismarck.

PROF. H. B. WARD, University of Nebraska, said that those who had not followed carefully the development of modern college education were not aware of the extent to which even in small colleges the elective system had been introduced. Formerly, a college course meant in the same section of country, or in a group of affiliated colleges, more or less the same training; not only four years, but four years applied relatively to certain lines, with some philosophy, some mathematics, some science, some literature and some history. The modern college had made a departure from this. Even the most conservative had introduced different courses which went under different names, but which in many, if not in all, cases led to the same degree, and in general he thought the degrees of B.S. and B.A. were apparently on a par with reference to future training. He not only emphasized but deplored the fact that there was not a series of recognized studies toward the professional line of medicine as there was in the mind of the college teacher with reference to theology, to law, or to some other vocation.

PROF. JAMES G. NEEDHAM, Lake Forest University, favored teaching general biology in colleges, letting the medical schools teach it as it applied to the human body. He would favor the colleges teaching general embryology, vertebrate embryology, but would let the medical schools teach those phases of it that applied to the human being and to the practice of medicine. The same with reference to other subjects. General colleges or universities could teach these branches to greater advantage than they were now being taught in medical schools.

DR. BURTON D. MEYERS, University of Indiana, said he had been studying seriously in connection with the medical department of the Indiana University the best means of developing and furnishing a preliminary education. The aim of those in authority was not to establish another medical school, but a medical department of the better kind, and they were ready to require four years of collegiate work if they were convinced that this was essential. A man who entered upon the practice of medicine ought to be able to use the English language correctly, to express himself clearly and concisely. He ought to be able to read French and German.

The report was further discussed by Drs. Daniel T. Nelson, John M. Dodson, R. O. Beard, B. D. Harrison and Professor Halsey.

The committee asked that the report be referred to the Council for action and recommendation as to whether the committee shall be continued, and it was so done.

REPORT OF THE COMMITTEE ON TEACHING HYGIENE IN THE PUBLIC SCHOOLS; AND THE PRESENT TEACHING OF DOMESTIC SCIENCE AND NATURE STUDY IN PUBLIC SCHOOLS, SO FAR AS THESE BRANCHES INCLUDE TEACHING HYGIENE.

This report was read by DR. HELEN C. PUTNAM, Providence, R. I., the other two members of the committee being Dr. Edward Jackson, Colorado, and Dr. George G. Groff, Pennsylvania.

Over seventy classes in domestic science in eighteen different cities were visited, and about as many in

nature study, in elementary, high, normal and special public schools.

Last year, in its report on the laws and on nearly one hundred textbooks in physiology and hygiene, written for children since 1882, the committee selected the latest and best books for special examination, to learn the possibilities and aims of these books. For the same reasons, in reporting the teaching of hygiene through domestic science and science teaching, the best programs of work were outlined, with brief details of the differences between these and the larger number of less efficient programs. The actual practice of principles of hygiene in domestic science and in the actual observation of biologic details and physical phenomena in the teaching of the sciences, called nature study in elementary schools, were briefly compared with the method of memorizing from books and talks. The larger range of work covered in the former classes was also noted.

The committee reserved its recommendations until it had reported on the other direct methods of teaching hygiene in the public schools.

ALTRUISM IN THE MEDICAL PROFESSION.

This was the title of the President's address, delivered by DR. WINFIELD S. HALL, Chicago. The higher the order of altruism, the fewer there were who attained to it. Voluntary sacrifice of life in order that other lives might be saved was the highest order of altruism. This height of sacrifice had been attained by a comparatively small number only; a number, however, that should include the names of many unknown heroes who had gone to their deaths while ministering to the sick in plague-stricken places, leaving no record of their heroism. The speaker cited examples from the ranks of the medical profession, covering a period from the founding of the profession to the present time. Enduring fame in the medical profession could be won through altruism only. If fame rested upon altruism, then would such names as William Stokes, Samuel D. Gross and Nathan Smith Davis have a fame which would endure through the ages.

Organized for the purpose of advancing the standards of medical education, of advancing the boundaries of medical science, of elevating the profession and of preventing disease, the work of the American Academy of Medicine had been altruistic from the time of its organization to the present. The field of its activities was ever-widening, and always along altruistic lines.

If he were asked to make a general recommendation, it would be that the Academy accept as its field of endeavor the altruistic responsibilities and activities of the medical profession, definitely outlining a program of research to be prosecuted along various lines as education, school hygiene, state medicine, ethics, etc. This research should be followed by carefully directed and persistent efforts to accomplish that which the research revealed to be advantageous to society.

Following the President's address, DR. CASEY A. WOOD, Chicago, delivered an interesting lecture on

THE EYES AND EYESIGHT OF THE LOWER ANIMALS,

which was illustrated by numerous colored stereopticon slides.

RECREATION IN ITS EFFECTS UPON THE NERVOUS SYSTEM.

DR. WILLIAM JAMES HERDMAN, Ann Arbor, Mich., stated that the practical methods by which suitable recreations were to be selected to meet the requirements of special classes or individuals would vary as taste, occupations and opportunities varied. From

the complexity of occupations in which people engaged there resulted the greatest variety of channels through which the store of nervous energy was depleted. Outdoor plays and games, requiring some skill, such as boating, fishing, swimming, skating, horseback riding, gardening, tool work and the like, were of much more recreative value than any of the artificial gymnastics which had no purpose nor incentive beyond the movement itself. For the brain worker the way was open to innumerable recreations, and the opportunity for choice and the possibility of varying their character, at will, would make the problem of healthful living an easy one if any man would but cultivate a sufficient variety of interests, so that when one channel of activity was for any reason closed to him, as a relief from necessary work, he had but to choose another. The practical result in this was seen when the statistics of health and longevity of the brain worker and of the muscle worker were compared. The researches of Dr. Beard and others had shown that brain workers not only lived from fourteen to twenty years longer than muscle workers, but that their health was more uniformly good and their stature of larger average. When mankind was once emancipated from the conception that honest work was contemptible drudgery, and learned to recognize the pleasures and recompense it had in store when rightly apprehended, which meant that the work selected must be suited to individual capacities and tastes, and when greed and selfishness gave place to a spirit of mutual helpfulness, the problem of recreation would be solved.

THE PHYSIOLOGY OF RECREATION.

DR. GEORGE W. McCASKEY, Fort Wayne, Ind., said that the primary and predominant factor in practically all forms of recreation was the psychical one. Although the influences of the mind over the body were recognized in a general way, it was fully comprehended by few, if any. The sudden change from a state of extreme depression and misery, with perfectly distinct physical suffering, to one of buoyancy and exultation, with entire forgetfulness of self as a result of a change of emotion was a not unfamiliar experience in the lives of most people.

As an illustration of the broad effects of mental impression in general, he mentioned the case of an attorney under his observation, whose digestion after considerable improvement remained more or less distressing in spite of all he could do for his relief which included the treatment of a local stomach disease by suitable methods, careful regulation of diet, gymnastics and a liberal amount of outdoor exercise. This gentleman would go to a little lake forty miles away, the very first meal that he would eat there, long before there could be any possible effect of exercise, atmospheric change, etc., would be digested without the slightest disturbance or even consciousness on his part, and this would continue until his return to the city, when the old conditions would be immediately resumed. If the various forms of recreation were closely scrutinized, it would, he thought, be found that those diversions and amusements which produced the promptest and most brilliant effects upon both the mental and physical states of those who participated were precisely those in which the psychical impression was the strongest. The first requisite in what might be termed successful recreation was a complete divorce from self, a complete submergence of self-consciousness, which inhibited that everlasting introspection of our physical selves which was the foundation of half the morbidity of the world. How this could best be done was a problem for the individual and depended upon his age, sex, social status, intellectual development

and other factors which went to make up the complete ego.

The next invited attention to the purely physical or mechanical aspects of many forms of recreation; in other words, the factor of muscular exercise, and said that the systematic introduction into our lives of such recreation as was suited to individual needs should be the rational aim of all, and a proper understanding of the physiological laws and facts which underlay the whole subject could not be otherwise than helpful. He concluded with the admonition of Virgil that "rural recreations abroad, and looks at home, are the innocent pleasures of a man who is early wise."

RECREATION AS A SOCIAL FACTOR.

DR. DWENY C. HAWLEY, Burlington, Vt., said that while work was necessary and enabling, and was the law the universe obeyed; refreshment of the strength and spirits after toil was likewise a necessity, which found expression in the natural cravings of the social instinct and in the general desire for diversion and amusement. The social instinct demanded satisfaction, and would find it in recreation and amusement, which was either beneficial and uplifting, or injurious and degrading. Teachers should realize the importance of recreation and use the opportunities which their positions afforded in influencing the children under their care to seek recreation which recreates, and amusements which would bring the most perfect joy.

THE RELATION OF RECREATION TO EDUCATION.

MR. R. K. ROW, superintendent of schools, Berwyn, Ill., presented a brief statement of the recognized psycho-physical theories of play, and then discussed the special educative functions of recreative activities. Out-of-door games, plays and recreations were the best means of physical education. He referred to the forms of recreation which involved considerable intellectual activity, and said co-operative games promoted social education. They developed the qualities of leadership, self-reliance, self-control and the spirit of co-operation in social groups. Recreation was a very large and vital factor in esthetic education. Recreative activities had also important ethical functions.

CEREMONIALS AND FEASTS IN THE EDUCATION OF LARGER GROUPS OF INDIVIDUALS.

DR. BAYARD HOLMES, Chicago, said that the value of the pageant had been well recognized by every organization which had aimed to secure a control over public opinion and public life. The educational and social functions of the pageant could not be confined to any one class or age. It had a use for every class and for every member of society. For the youth, there was one of the great liberty and freedom from restraint. For the young adult it furnished the occasion for important amenities. For the senior, the prime of life, abundant opportunity was given for the display of success in duty and every activity of life. The social, the economic, and the political success could be satisfactorily exhibited within the column of affluence or adversity. Even the aged might receive the satisfaction of an honorable defeat. But the extent of the influence of the pageant and the social and festive festival reached farther, it could be said, and aged every joy giving activity of life.

MEDICAL FEATURES OF CERTAIN RECREATIONS.

DR. CARL H. VON KRIES, Chicago, presented an exhaustive and scholarly paper on the medical features contained a history of the development of the various sports. The author described the medical features of

of writing, mentioned its age, the date of transcription, the contents of the papyrus and gave a description of the diseases mentioned in it and their treatment. He likewise mentioned the transcription of the papyrus from hieratic to hieroglyphics, and from the latter into a Latin glossary. He called attention to the various medical papyri now in existence, and referred to the similarity of ancient Egyptian medicine to the Mosaic. He discussed post-Biblical medicine in its relation to the time of Hippocrates, following up with the Mishna and Homer, giving a complete history of prehistoric medicine from about five thousand years before the Christian era down to the time of Hippocrates, with a translation of the same into English by the author.

OFFICERS.

The following officers were elected for the ensuing year: President, Dr. Donly C. Hawley, Burlington, Vt.; Vice-Presidents, Dr. Helen C. Putnam, Providence, R. I.; Dr. C. W. McCaskey, Fort Wayne, Ind.; Dr. Henry B. Favill, Chicago; Dr. James T. Searcy, Tuscaloosa, Ala.; Secretary-Treasurer, Dr. Charles McIntire, Easton, Penn.; Assistant Secretary, Dr. Samuel C. Stanton, Chicago.

Boston, Mass., was selected as the place for holding the next annual meeting; time, June 2-4, 1906.

Recent Literature.

Manual of Chemistry. By W. SIMON, Ph.D., M.D., Professor of Chemistry in the College of Physicians and Surgeons of Baltimore, and in the Baltimore College of Dental Surgery; Emeritus Professor in the Maryland College of Pharmacy, Department of the University of Maryland. Eighth edition, thoroughly revised. Philadelphia and New York: Lea Brothers & Co. 1905.

The previous editions of this work have been reviewed by us, and the valuable features of the book commented upon. This eighth edition differs very little from the seventh, except that the new United States Pharmacopœia has rendered a few changes and additions necessary. Several of the chapters on organic chemistry have been rewritten and made to conform to modern views. The subject of dental metallurgy has been given more attention, and a few changes have been made in the colored plates. The book is a good one for beginners in chemistry and specially designed for students of medicine, pharmacy and dentistry.

The Pharmacopœia of the United States of America. Eighth decennial revision. By authority of the United States Pharmacopœial Convention held at Washington, A. D. 1900. Revised by the Committee of Revision and published by the Board of Trustees. Official from Sept. 1, 1905. Philadelphia: P. Blakiston's Son & Co. 1905.

The eighth decennial revision of the United States Pharmacopœia appears as a volume of 692 pages, including the index. In arrangement and

subject matter it does not differ from previous editions. Liberal revision has, however, been made in the work of classifying and arranging the drugs to meet the advance in knowledge. The number of articles, test solutions and assays in the present Pharmacopœia as compared with that of 1890 shows an increase of forty articles. Of the articles previously official, 151 have been discarded, whereas 117 new ones have been introduced. In the present volume there are 958 articles in the text, 155 test solutions and volumetric solutions, 149 volumetric assays, and 35 gravimetric assays. In the Pharmacopœia of 1890 there were 994 articles in the text, 135 test solutions and volumetric solutions, 114 volumetric assays and 14 gravimetric assays. The subject matter is well arranged and easy of reference.

Static, High-Frequency, Radio-Photo and Radium Therapy. By DR. WILLIAM HARVEY KING. 291 pages. Boericke and Runyon. 1905.

Dr. King, who is the "Head of Clinic of Physical Therapeutics and Visiting Electro-Therapist at the Flower Hospital," states in his preface that "this work covers the subjects given in the title only and does not claim to be a complete treatise on electro-therapy." The book may be divided into three parts. In the first the author describes the various kinds of apparatus used; in the second the physics and physiology, while in the third he takes up the therapeutic application of the different methods.

Dr. King states also that he has aimed at conciseness. It has often happened that other authors with this same aim have attained their object but in so doing have destroyed the value of their work by a resulting lack of clearness and coherence. Dr. King, however, has avoided this sacrifice and has given us a book which is at once concise, coherent and intelligible. When one considers the breadth of the field which the subjects under discussion cover, his success in condensation becomes the more marked. The essential points in each subject are given clearly and in so few words that each one gains emphasis from the pruning. The author's statements are often dogmatic but that is to be expected in a work of this size as the limited space naturally forbids any extended discussion. Yet the writer has shown on the whole the conservatism for which he has striven. Further, the dogmatism is in a measure forced upon him by his desire, expressed in the preface, to adapt the book to the use of the busy man. Such a man must have his facts served up with the fewest possible qualifying phrases. Other workers in the subjects treated will, of course, object to many of Dr. King's conclusions, for even he says that there are many things to be worked out before any one can speak with final authority. Nevertheless, Dr. King's views may be considered fair and, even if not always acceptable to every one, they will at least serve as good points of departure for further research. The book, in our opinion, will be found readable and instructive.

same direction which has already borne much practical fruit.

In general, what we need to do in our overstocked out-patient departments is to systematize our work and give to each patient the maximum of benefit which can be derived from a single hasty hospital visit. The plan of forming classes of certain allied types of disease has been proved feasible and should be more widely practised. We have no doubt that the results would be similar to those attained in the tuberculosis classes, although possibly less striking. The contact of patient with patient, the stimulus toward carrying out directions and the feeling of fellowship which the class spirit engenders, should all be of service toward the attainment of the final result. The possible loss of the individual element in treatment would be a smaller evil than are many of the defects of our present system. At least, the experiment is worth trying.

IDENTIFICATION AND AUTOPSY OF THE BODY OF PAUL JONES.

The unusual interest which was aroused by the discovery, identification and transference of the body of Paul Jones from France to America is being revived again through the medical press. The story of the disposal of the body in a lead coffin and its recovery and identification after a period of one hundred and thirteen years, is generally known. Following the directions given in a plan which the searchers were able to secure, two coffins were finally found at a depth of sixteen feet beneath a house, one of which was found to contain the almost perfectly preserved body of Paul Jones, from which it was not difficult to make absolute identification by certain initials on the clothing and physical characteristics based upon historical details and upon the examination of two busts attributed to Houdin. The body was completely packed in straw, and was of a brownish black color, in an excellent state of preservation. In general, the appearance was that of a mummy, but the soft parts were still soft. In appearance and odor the body was similar to an old anatomical preparation long preserved in alcohol. A detailed description of the methods taken to establish the identity of the body is given in the February number of the *Edinburgh Medical Journal*, in turn taken from a recent number of the *Revue d'Ecole d'Anthropologie*, which serves as an

admirable example of modern scientific method. The combination of the evidence derived from various sources leaves no doubt whatever of the correctness of the ultimate conclusion that the body of Paul Jones had actually been recovered.

These facts have received wide comment, but so far as we are aware, the post-mortem findings have not been hitherto published, which certainly present a unique example of the possibilities of pathological research. It was known that during life Paul Jones had suffered from pulmonary disorder, and also that he probably had serious disease of the kidneys. We wish here merely to call attention to the results of the histological examination of the organs. The extraordinary fact was revealed that this histological examination gave practically as good results as if made immediately post-mortem. The lung tissue showed areas characteristic of bronchopneumonia, but Professor Cornil, who made the examination, failed to find giant cells or tubercle bacilli by the usual staining methods. There was distinct evidence of chronic interstitial nephritis, as indicated by sclerotic areas corresponding with glomeruli and thickened vessel walls. The liver was normal and gave most excellent sections. The report furthermore makes the following statement:

"On the surface of the skin, as well as of the viscera, but more especially on the lower limbs and surfaces of the lungs, small, white firm masses were observed. These proved on examination to be masses of crystals formed in the bundles of delicate needles characteristic of tyrosine, and also small round bodies, consisting probably of leucine. In order to explain the production of these crystals, we must suppose that between the time when the body was placed in the alcoholic preserving fluid and the period when the fluid had become imbibed into the various viscera, a sort of autolysis took place in the interior of the organs, which, in a manner similar to the digestion of albuminoid matters by diastases, gave rise to the formation of tyrosine. This interesting observation is worthy of being recorded along with the curious facts, wholly unexpected, it must be admitted, which the post-mortem examination on this historic body revealed. As we have seen, the results of the histological examination were in complete accordance with the clinical symptoms present during the last years of Paul Jones's life."

With this it is fitting that the body of Paul Jones should be finally and forever laid at rest. It is matter for congratulation that he has finally been interred in the land of his adoption, with all possible civic and military honors.

A POSSIBLE EXCESS OF ZEAL.

While recognizing the absolute importance of legislation directed against impure food, and commending all efforts toward the abatement of the evil, it must be admitted that a *reductio ad absurdum* is not an impossibility in this as in other matters of vital concern. Dr. H. W. Wiley, whose enthusiasm for reform we recognize and applaud possibly oversteps the mark of calm wisdom in his recent effort to deprive raspberry vinegar of its time-honored name. A New York daily contemporary quotes the decision as follows:

"A shipment of food product has been offered for importation labelled 'raspberry vinegar.' On notice that it was held for inspection, a representative of the importer appeared and stated that the substance was not a vinegar, but a drink, and intended to be used as a beverage. In this case the material is held to be misbranded, as a vinegar is never intended for a beverage, but only as a condiment.

"Notice is given that after May 1, 1906, importations of this description, or similar thereto, will not be admitted if misbranded in the manner mentioned. The name of the article, if descriptive, must indicate its true character. It is suggested that the term 'raspberry beverage' is a suitable designation. It will be held, however, that if so labelled, it must be a beverage made solely from raspberries or raspberry juice, and not preserved with any substance unmentioned on the label, except sugar, vinegar, or spices. Any substance added to such a product must not be injurious to health nor in violation of the laws of the country whence it comes."

Our contemporary thinks this is unnecessary, and we confess, if the report is correct, we are inclined to agree with him. The literalness of the terminology carries us too far. As our contemporary somewhat jocularly remarks, the term raspberry shrub "that simple potation of our boyhood" violates this decision. And the difficulties which are forced upon us grow as we contemplate other possibilities. We certainly wish absolutely pure food and no deception, but it is unwise to expose to the possibility of ridicule a movement which should receive the serious backing of every right minded person.

MEDICAL NOTES.

INFECTIOUS DISEASE AND PULLMAN CARS.

It is reported that the Pullman Car Company has gained its case before the Supreme Court of Alabama in its contention that it has the right to exclude from its cars persons with contagious or infectious disease. This decision grew out of

a case in which a passenger claimed damages because of his removal from a car of the Pullman Company. He won his case in the lower court, but this decision was reversed by the Supreme Court.

REPORT OF THE ADIRONDACK SANITARIUM. — The twenty-first annual report of the Adirondack Cottage Sanitarium has been published together with a medical supplement prepared by Dr. Lawrason Brown in accordance with the suggestion of the National Association for the Study and Prevention of Tuberculosis. The wide reputation which this sanitarium has obtained is demonstrated by the fact that patients discharged during the past year came from 20 states of this country and Canada, a total of 182. The various details of organization which have been developing during the past few years have been carried further during the past year with apparent benefit. Dr. Brown's supplement is a valuable statistical statement in tabular form of the results of treatment in a large number of patients.

WIDENER MEMORIAL HOME FOR CRIPPLED CHILDREN. — At the formal opening of the Widener Home for Crippled Children in Philadelphia, which occurred this week, it was announced that Mr. Widener, who had already given two million dollars for the building of the institution, had donated three million dollars more as a fund for maintenance. Dr. De Forest Willard made an address on the occasion of the opening of the hospital and stated the object of the institution to be as follows:

"For crippled and deformed minors, without distinction of creed, nationality or sex, to supplement the work of hospitals, to strengthen and renew the weak ones, and then to educate them into habits of industry, order, cleanliness, self-respect and self-reliance, to apply such mental, moral and religious training as will render them true, honorable, useful and self-sustaining members of the community."

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON.

For the week ending at noon, March 7, 1906, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 12, scarlatina 19, typhoid fever 1, measles 186, tuberculosis 80, smallpox 0.

The death-rate of the reported deaths for the week ending March 7, 1906, was 20.14.

BOSTON MORTALITY STATISTICS. — For total number of deaths reported to the Board of Health for the week ending Saturday, March 3, 1906

was 242, against 230 the corresponding week of last year, showing an increase of 12 deaths and making the death-rate for the week 21.20. Of this number 125 were males and 117 were females; 228 were white and 14 colored; 145 were born in the United States, 92 in foreign countries and 5 unknown; 45 were of American parentage, 164 of foreign parentage and 33 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 40 cases and 5 deaths; scarlatina, 12 cases and no deaths; typhoid fever, 9 cases and 1 death; measles, 207 cases and 3 deaths; tuberculosis, 84 cases and 29 deaths; smallpox, no cases and no deaths. The deaths from pneumonia were 49, whooping cough 1, heart disease 32, bronchitis 8 and marasmus 7. There were 7 deaths from violent causes. The number of children who died under one year was 47; the number under five years, 72. The number of persons who died over sixty years of age was 50. The deaths in public institutions were 79.

There were 2 cases and 3 deaths reported from cerebrospinal meningitis during the week.

"THE LION AND THE LAMB." — The allopathic lion and the homeopathic lamb have dined together, and nothing detrimental to either party happened. The occasion would have been perfect if, instead of touching glasses, the brethren had exchanged pills. — *Boston Herald*.

THE INDUCEMENTS TO ENTER THE NAVAL MEDICAL SERVICE. — Medical Director R. A. Marmon, U. S. N., president of the Naval Medical Examining Board, will give an address at the Harvard Medical School, in Lecture Room E, on Monday, March 12, at 8 P.M. The subject of the address will be "The Inducements which the Naval Medical Service Now Holds out to Young Men under Thirty Years of Age."

CONSUMPTIVES' HOSPITAL TRUSTEES. — Subject to confirmation by the Board of Aldermen, Mayor Fitzgerald has made the following appointments as trustees of the proposed Consumptives' Hospital in Boston: Edward F. McSweeney for five years, Miss Elizabeth A. Power for four years, Dr. James J. Minot for four years, Isabel Hyams for three years, John E. Potts and Dr. John F. O'Brien for two years and Herbert F. Price for one year. These trustees are empowered to expend \$150,000 ordered on July 3, 1901, but which has never been used. Mayor Collins was of the opinion that the amount was too small to begin an enterprise, the expense of conducting

which would be very considerable. There has from the first been a difference of opinion on this point.

NEW YORK.

PAID ADMITTING PHYSICIANS. — As the result of action taken at a meeting of the Board of Trustees, held Feb. 28, Bellevue Hospital will hereafter have four paid physicians for its reception ward. They will receive a salary of \$600, and serve in four-hour tours of duty. Up to the present time the work of admitting patients has devolved upon the regular internes of the hospital.

DIPHTHERIA AT BELLEVUE. — Several cases of diphtheria have developed in Ward 31 of Bellevue Hospital, devoted to children. One of the house staff, Dr. I. O. Woodruff, Jr., who had charge of the ward, contracted the disease and has been removed to the Minturn Hospital for Scarlet Fever and Diphtheria Patients. The infection is thought to have been carried to the ward by a child, seven years old, who was admitted from St. Vincent's Hospital with the diagnosis of cerebrospinal meningitis.

A BILL FOR LICENSING OSTEOPATHS. — The osteopaths have again renewed their efforts to get the legislature to recognize their practice, and on Feb. 28 a public hearing was given at Albany before the Senate Judiciary Committee on the Davis bill, which creates an osteopath examining board under the regents of the State University. Among those who spoke in opposition to the bill were Dr. Algernon T. Bristow of Brooklyn, ex-president of the State Medical Society; Drs. Abraham Jacobi, Edward D. Fisher and Frank Van Fleet, of Manhattan; Dr. Moriarity of Saratoga, and Edward O'Brien, attorney for the Erie County Medical Society. They contended that the bill as framed would give the persons now practising osteopathy recognition as physicians, without any adequate medical education. The only advocates of the measure were four osteopaths from different cities of the state.

Miscellany.

EPIDEMIC CEREBROSPINAL MENINGITIS; CLINICAL REPORT AND ANALYSIS OF SPECIAL SYMPTOMS IN THIRTY CASES, WITH REMARKS ON THE TREATMENT.

WILLIAM M. LESZYNSKY, *Medical Record* (March 3), presents in this paper the complete records of thirty patients. In all but one of these the diagnosis was confirmed by the demonstration of the *Diplococcus intracellularis meningitidis*.

gilitis in the cerebrospinal fluid. In this case, lumbar puncture resulted in a "dry tap"; nevertheless, more than the usual number of symptoms were present. Nearly all types of the disease are represented in this series of cases. Of the 30 patients, 17 were males and 13 were females. Fifteen recovered and 15 died, a mortality of 50%. Three children were of one family (two died), and two sisters were of another (one died). One boy, seven years old, died on the three hundred and seventh day. A boy thirteen years old, who recovered and was discharged, was readmitted six weeks later with another attack, from which he completely recovered. The duration of the disease in the fatal cases at the time of admission averaged about five days. The only fatal visceral complication was pulmonary edema. The writer declares that this is *par excellence* a disease of the nervous system. Whatever may be the sequelae, they are generally secondary to alterations in the nerve structures. The writer gives an analysis of a number of special symptoms: herpetic and petechial eruptions; muscular rigidity; loss of control of the bladder and rectum; the condition of the knee jerks; Kernig's sign; the Babinski plantar reflex; facial paralysis; deafness, and eye symptoms. The prognosis in this disease is frequently a most perplexing problem, especially during its early period. Most important features in the treatment are good nursing and proper feeding. Lumbar puncture was performed in each one of these cases once or oftener for either diagnostic or therapeutic purposes, and there were no unpleasant results. When the patients were restless or noisy, chloroform was used. A Quincke needle was generally employed.

THE BOSTON SESSION OF THE AMERICAN MEDICAL ASSOCIATION.

THE Boston session of the American Medical Association will be the largest ever held. There is no doubt of it. It will be forty-one years since the Association met in New England, and the historical attractions will, of themselves, be sufficient to draw many to the meeting. The members of the profession from New York city and state — will go as they have never gone before. From the South, the Southwest and the extreme West there are more inquiries about railroad rates, accommodations at Boston, etc. than in any other year. New England itself is also being heard from in a way to show that it will be unusually well represented at the session. The officers of nearly all the sections report filled programs unusually early and more evidence of interest in scientific work. While the passenger associations have not acted definitely, those in authority have given assurances that half rates will prevail, with the extension of time to those who want to extend their visit in New England. It is hoped that provisions will be made to accommodate those who want to go by one route — say by the lakes — and return by

another. Many foreigners have already accepted invitations to attend, among them Prof. Trendelenburg, Leipzig, Germany; Mr. Reginald Harrison, London, England; Prof. von Rosthorn, Heidelberg, Germany; Prof. Dührssen, Berlin, Germany, and Prof. von Frey, Würzburg, Germany. Hence we repeat: The Boston session of the American Medical Association will be the largest ever held, and the Boston people know it and are acting accordingly. Committees have been working for months making preparations, and they promise good accommodations and a thoroughly interesting and profitable time to all who attend. — *Journal American Medical Association*, March 3.

OFFICIAL ORGAN OF THE NATIONAL ASSOCIATION FOR THE STUDY AND PREVENTION OF TUBERCULOSIS.

THE *Journal of the Outdoor Life*, which is published at the Adirondack Cottage Sanitarium, Trudeau, N. Y. (Saranac Lake), and which has just entered upon its third year, has been made the official organ of the National Association for the Study and Prevention of Tuberculosis. The *Journal of the Outdoor Life* deals with the outdoor treatment of tuberculosis in an intelligent and scientific manner. It does not advocate self-treatment by the laity or attempt to supplant personal medical advice. It aims to point out the more common pitfalls that beset the unwary health seeker and to awaken in its readers a healthful interest in an outdoor life. It advocates competent medical supervision, fresh air, nourishing food and carefully regulated exercise.

Correspondence.

"THE PURGATION OF THERAPEUTICS."

New York, March 3, 1906.

My Editor: In view of your editorial with a view to submit what follows:

I. There are unquestionably a few proprietary medicines of great and remedial value by reason of special pharmaceutical knowledge, which has been employed to obtain the alkaloids or extracts from a particular plant. The individual to whom this process has become known, after much work and investigation, is not bound contractually to divulge his secret, admitted his character as above approach, as proven by his long good service, on the judgment of his peers. And I am bound morally to the use of this preparation for my ill patient if I know of and equally reliable and effective agent in the treatment of his case? And if this be true, why may I not say so?

II. There are compounds which must exert their purgative effect through other. I have discovered no preparation for certain symptoms. It is my own, or belongs to a particular drug firm whose honor and reputation among pharmacists is established. If it be a new compound, it is impossible always to recall its process, and I am bound. And in order to make use of it without which my patient must be regarded as a particular drug firm, I am bound to name which shall designate it to the drug firm. It belongs to the firm, I prescribe with the name of the firm, I have given it.

Very truly yours,

BRENDEN HARRISON.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, FEB. 24, 1906.

| CITIES. | Reported deaths in each. | Deaths under five years. | CITIES. | Reported deaths in each. | Deaths under five years. |
|------------------------|--------------------------|--------------------------|------------------------|--------------------------|--------------------------|
| New York | 1,656 | 538 | Quincy | 5 | — |
| Chicago | 591 | 177 | Waltham | 5 | 1 |
| Philadelphia | — | — | Gloicester | — | — |
| St. Louis | — | — | Pittsfield | 5 | — |
| Baltimore | 229 | 80 | Brookline | — | 1 |
| Cleveland | — | — | North Adams | 5 | 0 |
| Buffalo | — | — | Chicopee | 8 | 2 |
| Pittsburg | — | — | Northampton | 13 | 5 |
| Cincinnati | — | — | Medford | 6 | 1 |
| Milwaukee | — | — | Beverly | 7 | 1 |
| Washington | — | — | Hyde Park | — | — |
| Providence | 74 | 24 | Newburyport | 7 | 2 |
| Boston | 261 | 63 | Leominster | — | — |
| Worcester | 47 | 14 | Melrose | 1 | 0 |
| Fall River | — | — | Woburn | 5 | — |
| Cambridge | 36 | 15 | Marlborough | 5 | 0 |
| Lowell | 42 | 12 | Westfield | 5 | 1 |
| Lynn | 28 | 6 | Peabody | — | — |
| New Bedford | 29 | 9 | Revere | 3 | 2 |
| Springfield | 16 | 4 | Clinton | 4 | 1 |
| Lawrence | 33 | 13 | Attleborough | — | — |
| Somerville | 18 | 2 | Adams | — | — |
| Holyoke | 29 | 9 | Garbur | 8 | 5 |
| Brackton | 13 | 1 | Milford | — | — |
| Malden | 16 | 3 | Weymouth | 4 | — |
| Salem | 19 | 5 | Frammingham | — | — |
| Chelsea | 11 | 6 | Watertown | 3 | 0 |
| Haverhill | 10 | 2 | Plymouth | 3 | 0 |
| Newton | 12 | 1 | Southbridge | 13 | — |
| Fitchburg | 13 | 5 | Wakefield | 13 | — |
| Taunton | — | — | Webster | — | — |
| Everett | 3 | — | | | |

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING FEBRUARY 28, 1906.

PETTES, W. J., assistant surgeon-general. Granted leave of absence for 1 month from March 1, 1906. Feb. 27, 1906.

MAGRUDER, G. M., surgeon. Upon expiration of leave of absence to proceed to Portland, Ore., and assume command of the service. Feb. 23, 1906.

NYDEGGER, J. A., passed assistant surgeon. To proceed to Perth Amboy, N. J., for special temporary duty, upon completion of which to rejoin station at Stapleton, N. Y. Feb. 26, 1906.

OFFER, L. E., passed assistant surgeon. Granted one day's leave of absence under paragraph 189 of the regulations. Dec. 12, 1905.

KOKN, W. A., passed assistant surgeon. Granted leave of absence for fourteen days from March 2, 1906. Feb. 26, 1906.

LONG, J. D., passed assistant surgeon. Granted seven days' leave of absence in December, 1905, under paragraph 191 of the regulations.

BURKHALLER, J. T., passed assistant surgeon. Upon being relieved by Assistant Surgeon R. D. Spratt to proceed to Ellis Island, N. Y., reporting to the medical officer in command for duty. Feb. 21, 1906.

SPRATT, R. D., assistant surgeon. Relieved from temporary duty at Mobile, Ala., and directed to proceed to Brunswick Quarantine Station and assume command of the Service, relieving Passed Assistant Surgeon J. T. Burkhalter. Feb. 21, 1906.

DELAGADO, J. M., acting assistant surgeon. Granted four days' leave of absence from Feb. 13, 1906, under paragraph 210 of the regulations.

KURTZ, W. E., acting assistant surgeon. Granted leave of absence for thirty days from Jan. 1, 1906, on account of sickness. Feb. 21, 1906.

RICHARDSON, N. D., acting assistant surgeon. Granted leave of absence for fourteen days from Jan. 27, 1906, on account of sickness. Feb. 21, 1906.

SAITFORD, M. V., acting assistant surgeon. Granted three days' leave of absence from Feb. 17, 1906, under paragraph 210 of the regulations.

O'GORMAN, T. V., pharmacist. Relieved from duty at New Orleans, La., and directed to proceed to Memphis, Tenn., reporting to the medical officer in command for duty and assignment to quarters. Feb. 26, 1906.

SCOTT, E. B., pharmacist. Granted two days' leave of absence from Feb. 21, 1906, under paragraph 210 of the regulations.

BOARD CONVENED.

Board convened to meet at the Bureau, Washington, D. C., Feb. 24, 1906, for the purpose of making a physical examination of an officer of the Revenue-Cutter Service. Detail for the Board: Assistant Surgeon-General W. J. Pettus, chairman; Assistant Surgeon J. W. Trask, recorder.

SOCIETY NOTICES.

AMERICAN MEDICAL ASSOCIATION CHORUS.—I have been asked to announce to eighty voices a chorus of physicians (who have sung together for some years past at the annual dinner of the Massachusetts Medical Society) in order that we may furnish some music at the President's Reception during the coming meeting of the American Medical Association in June, 5-8. We have now forty-five names on our chorus list. We must have five or six rehearsals between now and June. Anyone knowing of any good singers in the profession (graduates or undergraduates) will please suggest names (their own or others) to

RICHARD C. CABOT, M.D.,
190 Marlboro St., Boston.

THE AMERICAN LARYNGOLOGICAL, RHINOLOGICAL AND OTOLOGICAL SOCIETY.—The twelfth annual meeting of the American Laryngological, Rhinological and Otolological Society will be held under the presidency of Dr. Jas. E. Logan, at Kansas City, Mo., on Monday, Tuesday and Wednesday, June 11, 12 and 13, 1906. The Council respectfully calls your attention to the prizes which have been offered by the following members of the Society: J. E. Sheppard, M.D., Topic: "The Best Classification of Non-suppurative Affections of the Middle Ear," the same to be based so far as possible on pathological research. Prize, \$100.00. Dr. Braden Kyle, M.D., Topic: "Atrophic Rhinitis." Prize, \$100.00. Charles W. Richardson, M.D., Topic: "What Operative Treatment Offers the Best Results for the Cure of Chronic Suppurative Frontal Sinusitis." Prize, \$100.00. Norval H. Pierce, M.D., Topic: "Original Work on Rarification of the Labyrinthine Capsule." Prize, \$100.00. Edward B. Dench, M.D., Topic: "Chronic Non-suppurative Inflammation of the Middle Ear." Prize, \$100.00.

The above named prizes may be competed for by members of Society only and competitors are requested to present their papers to the Society will enter into a written competition both for the prizes and for the original Research Fund.

The Council further announces that the Society holds for the encouragement of research a fund of \$500.00, the whole or a portion of which may be awarded at the discretion of the Council, to any of the Society's members presenting an essay embodying original work in subjects pertaining to laryngology, rhinology or otology. The Council reserves the right to make no award, if in its opinion the essays are of insufficient merit. All essays submitted must be anonymous, being designated by a motto or device, the writer's name and address accompanying the essay in a sealed envelope, inscribed with the same motto or motto as the essay. It is hoped that many members of the Society will enter into this competitive competition both for the prizes and for the original Research Fund.

WENDELL C. PHILLIPS, M.D., Secretary.

THE BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.—The regular meeting of the society will be held in Sprague Hall, Medical Library Building, on Monday March 12, 1906, at 8:15 P. M. Program: "Some Cases of Septic Infection," Dr. E. Channing Stowell. "Remarks on Joint Infections," Dr. Robert W. Lovett. "The Relation of the Histological Changes in the Tonsils to Systemic Infections," Dr. J. L. Goodale.

DANIEL FISKE JONES, M.D., Secretary.

RECENT DEATHS.

DR. WILLIAM P. DRAKE of New York died on March 1 from an over-dose of morphine, taken while suffering intensely from facial neuralgia. Dr. Drake was thirty-one years of age and was graduated from the medical department of the University of the City of New York in 1889. At the time of his death he was a medical examiner of the Prudential Life Insurance Company.

WARREN PERKINS BLAKE, M.D., M.M.S.S., died in Springfield, Feb. 15, 1906, aged forty-seven years.

JOHN HARRIS PETTEE, M.D., M.M.S.S., of Roxbury, died March 5, 1906, aged thirty-four years.

Original Articles.

ADENOMYOMA OF THE UTERUS. A REPORT OF FOUR CASES.

BY W. P. GRAYSON, M.D., BOSTON.

From the Laboratory of the Free Hospital for Women.

The four cases of adenomyoma occurring in the collection of uterine fibroids examined in the laboratory of the Free Hospital for Women the past three and one-half years are reported, first, because they represent a somewhat higher percentage of these tumors than is ordinarily found, and, secondly, because they illustrate in a very convincing way the somewhat doubtful histogenesis of these very interesting tumors.

The occurrence of four adenomyomata in a total of one hundred myomatous uteri is, as far as I can learn, unusual, and may be accounted for as a mere coincidence, the total number of cases examined being too small a figure upon which to base a perfectly authentic percentage. On the other hand, it may possibly be explained by the fact that it is customary in the Free Hospital laboratory to make a searching routine examination of all myomata, with the hope eventually to establish reliable figures for the occurrence of deviations from type in uterine fibroids, especially with reference to the presence of adenomatous inclusions and the frequency of sarcomatous degeneration. The cases here reported are especially instructive from a histological standpoint because they happen to represent the two distinct groups into which these tumors are to be classified with reference to their histogenesis and the careful study of them ought to clear up any existing doubt on this point.

Myomata of the uterus containing epithelial gland inclusions have long been observed, and numerous theories as to their origin have been propounded. Disterweg, Schröder, Ribbert, Ruge, Babes and others considered them ordinary myomata, which, beginning near the endometrium, cut off some of the glands, which thus remain included during the growth of the myoma. Hauser advanced the theory that the epithelial glands represent portions of Müller's ducts which have wandered from their normal position during embryonal life and have become included by the myoma during its development, and that therefore the growths represent a sort of mixed tumor. Other investigators believe the gland inclusions to represent branchings from cutaneous ducts. Ricker, in the study of hundreds of small fibroid myomata, observed that they were all alike in character and concluded for this reason that the gland inclusions could not have originated from the uterine mucous membrane. He assigned their origin to offshoots from Müller's ducts.

The well known monographs of von Recklinghausen, who made an extensive study of these interesting tumors, did much to clear up the doubt which existed as to their histogenesis. He pointed out that they might originate from two different sources, namely, the remains of the

Wolffian ducts or the uterine mucous membrane, thus dividing them into two distinct forms. The four cases here described represent the two groups described by von Recklinghausen, namely, that originating from the Wolffian ducts, and that from the uterine mucosa. Three of my cases belong to the first group.

CASES ORIGINATING FROM THE WOLFFIAN DUCTS.

Without detailing at too great length von Recklinghausen's description of these tumors it may be stated in brief that he found the following characteristics common. These adenomyomata occur only on the posterior wall of the uterus and at the tube angles, or on the cranial side of the interstitial portion of the tubes. They are frequently bilateral. They are not circumscribed like the ordinary fibroids, and never have a capsule about them, but, on the contrary, grow into the surrounding tissue, and were therefore called by him diffuse or infiltrating fibroids. He distinguished hard, soft, cystic and telangiectatic forms, and formulated that the harder and smaller tumors develop nearer the serosa. Microscopically, von Recklinghausen found that these tumors contain scattered gland inclusions having a decided tendency to become cystic; that the glands are lined with a simple cylindrical epithelium, sometimes ciliated, and that they are surrounded usually, but not always, by a cytogenous tissue. The origin of these structures is referred to the rests of the Wolffian bodies and especially to the distal portion of it called the paroöphoron. As proof of this, von Recklinghausen pointed out the presence in the glands of ciliated epithelium such as appears in other growths derived from the Wolffian body, for example, the paroövarian cysts. He also showed in some of his specimens that the glands represent a well defined communicating system, and described "secretory" and "collecting" tubules with ampullar dilatations, thus resembling closely the structure of the paroövarium. As further proof of their origin from the Wolffian body, he described in these adenomyomata pigment bodies and a compound duct, both characteristic appendages of the paroöphoron in the female and the organ of Gaddoli or the paraödynia in the male. The paroöphoron and paroödynia, according to the author, in the female at least, exist only at the distal end of the parametrium, and form two rudimentary appendages of the uterus.

Although some of the main details of the histology of these adenomyomata are taken from von Recklinghausen's monograph, it is to be understood that a considerable number of additional observations have been made by the author.

CASE I. Mrs. P., thirty-two years of age, a year without menses, due to the fact that she had for Women's Hospital, physicians, Dr. J. C. Allen, Dr. J. A. Allen, Dr. J. C. Allen, and Dr. J. C. Allen, and a course of treatment consisting of the use of ergot, with temporary relief. The diagnosis was peritonitis, and the operation was performed, resulting in the

of cutting the uterosacral ligaments in order to relieve the malposition of the uterus. In the course of the operation a hard mass about the size of a pigeon's egg was discovered lying low down on the posterior surface of the uterus at the level of the reflexion of the peritoneum from the uterus to the rectum. An attempt to enucleate this mass was met with much difficulty from the fact that it was growing diffusely into the surrounding tissue. So firmly was it imbedded in the tissues that in removing it an opening was made into the rectum, which was closed, and from which no later trouble arose. The patient made a good recovery and a later report stated that she had been cured of her symptoms. Microscopical examination showed the tumor to be made up of typical myomatous tissue, in which were scattered gland inclusions which varied greatly in size; some of them being small, while others were considerably dilated. The epithelium lining these glands varied from a low cuboidal character to a high columnar variety, on which cilia could be occasionally distinguished. The glands were of a dichotomous type. Surrounding most of the glands was a cytogenous tissue. This cytogenous tissue was more marked wherever the glands were more closely grouped. Some of the isolated glands were closely surrounded by myomatous tissue.

The essential features in this case were: First, occurrence in a uterus which presented developmental defects; second, occurrence on the posterior surface of the uterus though in an unusual position; third, diffuse character of the tumor; fourth, presence of branching gland structures lying in a bed of cytogenous tissue.

CASE II. Mrs. W., twenty-eight years of age; married six years, without children; entered the Free Hospital November, 1905, with a complaint of dysmenorrhea for twelve years. An entrance diagnosis of fibroids of the uterus was made. At the operation an intraligamentary parovarian cyst was found on the right side. This was removed. On the posterior wall of the uterus were seen two small, hard, subserous myomata, one lying on the cranial side of the fundus and a little to the right of the median line, the other lying just under the right tube angle. In attempting to enucleate these myomata they were found so diffuse and so firmly infiltrating the surrounding tissue that it was necessary to dissect them out. The position of these small myomata, together with their marked diffuseness of growth, made it possible to diagnose them at once. This diagnosis was further confirmed by the appearance of the tube which showed a marked fibroid thickening on the cranial side of its interstitial portion. The ovary on the left side was good, and as the patient had been faithfully promised that at least one tube and ovary should be left her on account of her great desire to have children, it was decided not to remove the tube on this side, this being justifiable from the evidence of authorities of the non-malignancy of these tumors. There is no doubt whatever, in view of the further microscopical findings in the myomata of the right horn, that this tube thickening on the left side was a small adenomyoma of the tube corresponding to the type described by von Recklinhausen.

Microscopical examination of the two small tumors showed the following: The growth was chiefly made up of typical myomatous tissue, in which were scattered gland inclusions, both isolated and in groups, lined for the most part by columnar, ciliated epithelium. In places the gland structures were grouped together, uniform in size and running in parallel directions. The entire group was imbedded in a mass of cytogenous tissue. Some of the glands showed a dichotomous branching. The isolated glands showed a tendency to ampullar dilatation.

The essential features in this case were: First, occurrence in connection with an intraligamentary cyst of developmental origin; second, characteristic position and diffuseness of the adenomyoma growing in connection with the fibroid enlargement of the base of the left tube, probably also an adenomyoma; third, characteristic tubules described by von Recklinhausen.

CASE III. Miss M., forty-three years of age, single, entered Free Hospital December, 1905, with a history of dysmenorrhea. Diagnosis at entrance examination, multiple, subserous fibroids. At the operation the uterus was found to be somewhat symmetrically enlarged on both sides and was removed. The specimen on being examined in the laboratory was found to be that of a septate uterus. At both tube angles were found diffuse myomatous growths in which could be seen on section small cysts. Microscopical examination of the tissue from these myomatous enlargements showed that these cysts were dilated gland inclusions having the same characteristic cylindrical, ciliated epithelium and imbedded in cytogenous tissue in the manner described in the two previous cases. In this case some of the sections were so cut that some of the glands could be seen to form long, slender tubules, while others were greatly dilated and cystic. No definite communicating system could be made out without serial sections. The cytogenous tissue in this case was much more marked than in either of the others and there were many areas of it in which no gland structures lay, the sections doubtless having just escaped them. The essential features in this case were: First, occurrence in a uterus showing other developmental defects; second, long, slender isolated tubules probably connecting with the dilated and cystic ampulla.

It will thus be seen that the tumors here described correspond in nearly every particular to the adenomyomata described by von Recklinhausen as deriving their origin from the Wolffian rests. The only part of the evidence which is incomplete is that in no instance could any suggestion of glomeruli be discovered whatsoever, although a most careful search for these bodies was made. The study of these three cases discloses an additional fact which is extremely suggestive and one which I think is not noted in the cases of other writers. In all three cases there occurred, in connection with the presence of adenomyomata, well marked developmental defects of some part of the pelvic organs. How frequently this faulty development may occur with adenomyomata it is impossible to state, but it may be well imagined that some such condition is probably frequent and possibly constant.

ADENOMYOMA ORIGINATING FROM THE UTERINE MUCOSA.

Of this form of adenomyoma, von Recklinhausen has much less to say. He, however, recognized it as a different species and, in general, characterized it as follows: The neoplasm usually grows from the entire circumference of the uterine canal. The gland inclusions in the myoma connect with the uterine mucosa and resemble them in every respect. They have a tendency to become cystic. They may arise

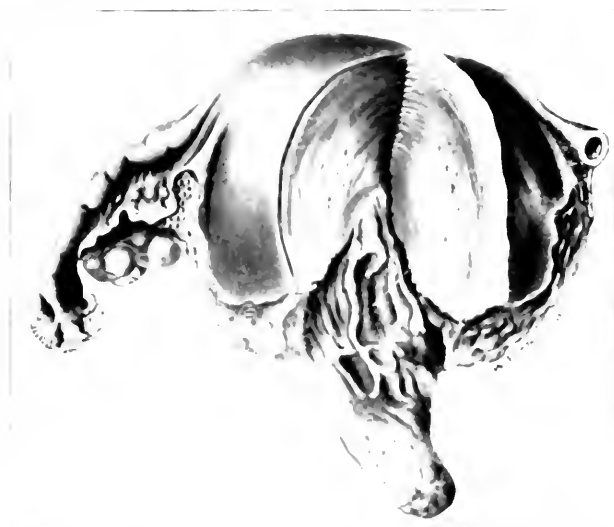
from the anterior wall of the uterus and even from the cervix.

Of this class of adenomyoma I have only one representative case, but this is a truly remarkable one. From the fact that I have found only one such case in one hundred myomatous uteri, and from the rather doubtful mention of them in literature, I am convinced that this form of tumor is rarer than the first group described, although this is a view which is not held by Abel. It will be seen that the type and general characteristics of this kind of tumor are so strikingly different from those already described that

CYTOGENOUS TISSUE.

Much has been said in the literature of these tumors concerning the importance of the cytogenous tissue in giving a clue to their histogenesis. Cytogenous tissue is a loose reticular tissue made up of round or spindle-shaped cells, which do not lie in close contiguity. It is found normally surrounding most gland elements, as, for example, in the uterine and intestinal mucosa. Many theories regarding the derivation of this tissue have been advanced; for example, Abel thinks that it may take part in the regeneration of the

ADENOMYOMA. GRAVES.



Adenomyoma originating from the uterine mucosa. The uterus is represented as having been opened along its anterior wall exposing the growth, which extrudes from the amputated cervix. Near the peripheral end of the tumor may be distinguished small cystic openings. The left tube, cut off near its base, shows the way in which it was dilated by the ingrowing carcinomatous mass.

but that they were ingrowths of the proliferating mesoplasm which were simply pushing their way into the openings of the tubes, taking the line of least resistance. The glandular structures found in this tumor evidently connected with the endometrial glands of the uterus and corresponded with them in general makeup.

The point of origin of this tumor, the appearance of the glands, the carcinomatous invasion from within outward and its general characteristics corresponding with the description of Von Recklinhausen form convincing proof that it derived its histogenesis from the endometrium.

The pedicle was at least six inches long and rather smaller than the little finger, and rotation had taken place so gradually that there was not the slightest evidence of strangulation. There were no adhesions to the walls of the tube or necrosis at the seat of torsion and the contents of the tube were clear and straw-colored. When the tumor was cut away and there was no tendency towards a return of the tumor. The ovary took no part in the torsion. I amitated the tube, leaving the ovary.

It was then found that the left tube, which was cut about the size and shape of a large egg and had a

* Read before the Obstetrical Society, October 16, Jan. 27, 1899.

of cutting the uterosacral ligaments in order to relieve the malposition of the uterus. In the course of the operation a hard mass about the size of a pigeon's egg was discovered lying low down on the posterior surface of the uterus at the level of the reflexion of the peritoneum from the uterus to the rectum. An attempt to enucleate this mass was met with much difficulty from the fact that it was growing diffusely into the surrounding tissue. So firmly was it imbedded in the tissues that in removing it an opening was made into the rectum, which was closed, and from which no later trouble arose. The patient made a good recovery and a later report stated that she had been cured of her symptoms. Microscopical examination showed

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CASE IV. Miss M., thirty-eight years, single, admitted to the Free Hospital December, 1904, with a history of metrorrhagia. Entrance diagnosis was fibroid polyp of the uterus. The uterus at operation was found to be boggy and heavy and was removed by a supra-vaginal hysterectomy. The specimen on examination in the laboratory showed a large, soft uterus from which extended a rather soft, polypoid tumor from the amputated cervix. Section of the uterus into the canal showed that the tumor was growing from the circumference of the canal, though mostly from the posterior wall. On the surface of the tumor, especially at the periphery, were small cystic openings. The peripheral end of the tumor was much harder and firmer than the proximal attachment to the uterus, where it was extremely soft and friable. Microscopical examination showed the tumor to be made up of smooth, muscular tissue and proliferating gland tissue. In the distal portion of the tumor, namely, that extruding from the cervix, the muscular tissue was well marked, including, however, many glands which had a decided tendency to become cystic. These glands were lined with a low cuboidal epithelium and contained mucous secretions. There was little cytogenous tissue, however, the muscular tissue for the most part growing closely in contact with the basement membrane. Further examination of the tumor nearer its base showed the myomatous tissue to be much less in evidence, while glandular tissue was proliferating in great profusion, and the non-glandular substance became more and more cytogenous in character. The sections of the myometrium near the point of origin of the growth showed that the glands had actually invaded the wall of the uterus to at least one half its width and were adenocarcinomatous in character. The tubes were both dilated at the junction with the uterine horns and masses of soft, friable tissue were found within them. Microscopical examination, however, showed that these masses were not growing from the lining membrane of the tubes, which, though much dilated, preserved their integrity, but that they were ingrowths of the proliferating neoplasm which were simply pushing their way into the openings of the tubes, taking the line of least resistance. The glandular structures found in this tumor evidently connected with the endometrial glands of the uterus and corresponded with them in general makeup.

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The study of these reported cases of adenomyomata of the uterus and of the stroma of the endometrium under all conditions of change in the endometrium, convinces me that it is merely a modified muscular tissue and occurs in the uterus and in the myomatous neoplasms of the uterus, serving as a protective bed for delicate gland structures wherever they occur.

BILATERAL TORSION OF THE FALLOPIAN TUBES.*

BY MARGARET TORRICE, M.D., BOSTON.
Gynecologist to Carney Hospital and Boston Dispensary.

This paper is based upon the following case:

A. K., Carney Hospital, vol. xiv, p. 505. Twenty-nine. Married six years. Never pregnant. No history of gonorrhea to be obtained. Menstruation regular and not especially painful. One year ago treated for dull pain in left side, lasting a month. Nothing acute. No vomiting. Possibly slight fever at times. For last two months some pain for two days before menstruation.

Examination showed a somewhat vague mass to left of the normally placed uterus, consisting apparently of the slightly enlarged tube with adherent ovary, while behind and to the right was felt a tense, elastic and unadherent, though not very movable, tumor the size of a fist.

Diagnosis.—Left salpingitis and right hydrosalpinx.

At operation, Aug. 25, 1905, it was found that a cold, symmetrical, right hydrosalpinx was present, measuring 4 inches by 3 by 3, wedged rather tightly behind and to the right of the uterus. On tracing this tube up it was found that it had been rotated through 360° following the heads of which, as its originally upper surface had swung forwards and to the right. The pedicle was at least six inches long and rather smaller than the little finger, and rotation had taken place so gradually that there was not the slightest evidence of strangulation. There was no cohesiveness in the walls of the tube or necrosis at the seat of torsion and the contents of the tube were clear and straw-colored. When the tumor was opened up and there was no tendency towards a return of the torsion. The ovary took no part in the torsion. I am not sure if the tube, leaving the ovary.

It was then found that the left tube was twisted about the size and shape of a large thumb, and also

* Read before the Obstetrical Society of Boston, Jan. 22, 1906.

undergone torsion, but only to 180° and in the direction contrary to the hands of a watch, the upper surface swinging forward and to the left, and had also twisted so that the closed fimbriated end now pointed at the posterior aspect of the uterine cornu, thus both tubes following Küstner's law of ovarian axial rotation. But while in the case of the right tube a twist of 360° caused no strangulation, on the left a twist of only 180° caused very extensive interference with circulation. The uncoiled pedicle proved to be some two inches long and was much thickened by exudate, and at the point of torsion was distinctly necrotic in patches and very friable. The tubal wall was dark and much ecchymosed and the tube contained about an ounce of pus much discolored with blood.

Thus the patient presented on the right a hydrosalpinx with complete torsion, but no strangulation, while on the left what was probably a hydrosalpinx originally had become by partial torsion a hematosalpinx with subsequent infection. The ovary was not involved on this side either, and as there was still some circulation in the walls of the tube, having in mind the patient's desire not to sacrifice all chance of maternity, I removed only the outer portion of the tube and made a new ostium in it ("stomatoplasty") and anchored the stump in such a position that torsion could not recur. Recovery was uneventful and permanent.

This case is not exactly typical of torsion of the tube in that there was present on one side a quite severe strangulation, with practically no symptoms. It also illustrates on the other side the rarest form of torsion, that without strangulation, a condition of which I have been able to find only three other cases reported, that of Legueu and two of Poirier. While it is fairly common to find an ovarian tumor that has undergone several revolutions without interference with its blood supply, the relative shortness of its pedicle makes that happy result far less apt to occur in the case of the tube. While a comparatively rare accident, torsion of the tube doubtless occurs much more frequently than the few cases reported would lead us to infer. Rejecting numerous cases included by previous writers on the subject in which the tube was twisted merely as part of the pedicle of an ovarian tumor that had undergone torsion, I have been able to get more or less complete accounts of 62 cases. But as 5 of these are reported by one man and 4 by another, while three others report 3 apiece and two others 2 apiece, it seems fair to assume that closer observation would have shown many more cases.

Bland Sutton first called attention to the condition in 1890, so that the 62 cases noticed since then prove it to be a complication of real importance. Apparently the case of Dr. E. L. Pierson of Salem, which I mentioned in a paper read before this Society in 1896 on the "Axial Rotation of Ovarian Tumors," was the eighth case reported.

As I have said, torsion without strangulation is excessively rare. When it does take place, the symptoms are, as a rule, very alarming and are those of any acute internal arrest of circulation, sudden pain, almost always nausea and vomiting, faintness, complete arrest of bowels and often paralysis of bladder, combined with local tender-

ness and increase of the size of the tumor from venous congestion. But there is so little distinctive about this picture that in the 37 cases in which the diagnosis before operation is given, in only one is the claim made that the true condition was recognized, by Racoviceano-Pitesti in the case reported by Dona of Bucharest, although Cathelin considered its possibility in his case. In these 41 cases the supposed diagnoses were salpingitis, 12; twisted ovarian tumor, 10; appendicitis, 7; cyst of ovary, 3; internal strangulation, 2; hydrosalpinx, 3; intraligamentous cyst, 2; twisted ovary or tube, 1; twisted tube, 1.

The correct diagnosis can probably be made only when it is known that a hydrosalpinx has been present previous to the advent of acute symptoms and that that hydrosalpinx has undergone a rapid increase in size, especially if a previously pelvic tube has become abdominal. Warneck has mentioned metrorrhagia as being an important symptom, tending to be intermittent according to Pozzi. I find it present in seven cases. On the other hand, metrorrhagia is so constantly found under all varieties of lesions of the appendages, that its presence can have but little diagnostic value, and, furthermore, in these seven cases there was a uterine polyp in one and malignant disease in two others—conditions under which it might be expected anyway. Warneck also speaks of feeling the twisted pedicle by the vagina in one case. This seems a refinement of tactile sense that but few of us can aspire to. If made at all, the diagnosis must be based upon the sudden pain in a patient known to have tubal trouble, with the other symptoms mentioned. The fact that the vomiting does not become fecal would exclude volvulus, and the lack of muscular spasm and fever would render an appendicitis improbable, although in several cases the maximum pain was directly at McBurney's point, noticeably in Pierson's. So, too, when an appendix becomes adherent to a twisted tube and secondary inflammation of the appendix occurs, there would be little chance of a correct diagnosis (cases of Hartmann and Villar). In the fourth case of Pozzi and that of Martin, where a tube containing a fetus underwent torsion and ruptured as a result, of course the diagnosis of the torsion was impossible, while in tubes that have become twisted without strangulation, the diagnosis of the twist is, of course, equally not to be made.

As most of these cases are hemato- or hydrosalpinx rather than pyosalpinx, and therefore are not surrounded by masses of exudate, we should expect to find a distinctly elastic and more or less freely movable tumor. As, unfortunately, they are apt to lie high in the pelvis, or in fact be abdominal, the chance of confusing them with ovarian cysts is a great one. In 37 cases that mistake was made 14 times.

As to the causation of torsion, the various theories that have been suggested are as yet only theories. In a few cases the sudden stabbing pain has followed muscular exertion of one kind or another, but in the majority of them

nothing of the kind is alleged. Certain conditions, however, favor a torsion. The tubal tumor must be situated in the distal portion of the tube, and it must be unadherent, — therefore in all probability a hydrosalpinx, — and it will generally have a long and comparatively thin pedicle. I have mentioned that in my case the pedicle was more than six inches long and smaller than the little finger. In only one case, that of Clado, were as many as three turns observed with a short, thick pedicle. As he observes, "There is a tendency of the inflamed tube to increase in its long axis, which involves lengthening of the mesosalpinx in the part corresponding with its implantation on the tube, while the parietal part does not grow. Therefore the tube is now dependent on a fan-shaped ligament, a condition favorable for torsion." In Pozzi's first case, three-fourths of a turn was present in a very short pedicle.

For torsion to occur, the tubal tumor must be fairly high in the pelvis. It is also striking that the presence of a pelvic tumor favors torsion of the tube. In the 60 cases under consideration, the torsion was associated with myoma in 4, with pregnancy in 3 and with an extra-uterine pregnancy on the other side in 3, while in a number difficult to determine, the other tube was more or less enlarged with serum or pus. The rather large number of associated pregnancies is striking, as *a priori* one might have expected such cases of tubal disease to be sterile. In the 3 cases with ruptured extra-uterine pregnancy on the other side, it may have been that the torsion was caused by superlying clots, though in one of them the observer thought the rupture was caused by the torsion. In Mellroy's case, the torsion was apparently caused by labor. In the case reported by Dona, it is possible that the twist was caused by an abscess of the ovary rupturing into the tube and so suddenly increasing its volume. In one of Pozzi's cases there was a torsion of the left tube ten days after an operation for torsion of the right, which, by the way, was diagnosed as appendicitis. This Pozzi regarded as possibly caused by the increased tension resulting from the intense congestion of the pelvic organs following the first operation. This, however, does not explain why the right tube got twisted. As to the general question of causation, it is not difficult to understand that a more or less pear-shaped tumor, with one end heavier than the other, balanced in unstable equilibrium in the center of the pelvis, should be peculiarly liable to roll one way or the other and so undergo torsion. The only wonder is that more tubes do not become twisted!

It does not appear that Küstner's law of direction of torsion applies as closely to the tube as to the ovary. It will be remembered that according to this law there is an innate tendency for tumors of the right ovary to rotate outwards — to the right and of left ovaries to rotate outwards — to the left. While in the case of the tube there seems to be in many observers' minds a vagueness as to what a right and a left rotation means, as

nearly as I can make out, 19 right tubes rotated to the right 8 times and to the left 11, while 14 left tubes rotated an equal number of times each way. Instead of speaking of right or left rotations or turning, in accordance with or contrary to the hands of a watch, I think it would be much wiser to adopt the suggestion of Cathelin and speak of "antetorsion" and "retrotorsion," regarding always what was originally the top of the tumor as the starting point. Apparently the larger the tube the greater the probability that it will follow Küstner's law, for if large it will be an abdominal rather than a strictly pelvic tumor. One might expect to find that torsion would be favored by irregularities of surface, but as a matter of fact most of these tubes, while tending to be ovoid or pear-shaped, are remarkably smooth and symmetrical in outline. Busquet holds that the mechanism of rotation is much influenced by the position of the uterus. If, according to him, the uterus is anteflexed, the tube tends to roll backwards, and if retroflexed, the tube goes forwards. While this law probably holds good in the case of small tubes, it is to be questioned whether it would do so in the case of larger ones, and when the uterus is in normal axis, as in my case, some other explanation must be sought.

The number of turns may vary considerably, 4 turn to 5½ in the cases considered, with an average of 1½ in 41 cases. As in a number of cases repeated acute symptoms, "*crises à répétition*" of Leguen, have been associated with the same number of turns as acute attacks, it is evident that an adhesive peritonitis does not always follow strangulation unless we suppose that the adhesions that followed each torsion subsequently disappeared before the next twist. It is noteworthy that in most of these cases of repeated attacks the adhesions are spoken of as recent or easily separated. Adhesions of some degree almost always follow a torsion if strangulation results. Thus in 22 cases of hemato- and pyo-salpinx they were absent in only 2, and in one of these operation was before adhesions had had a chance to form (Gosset).

The number of turns does not appear to have any great influence on the degree of strangulation, which depends more on the length and size of the pedicle. Thus in 8 cases the tube was wholly or almost entirely separated from its pedicle, with an average of 1½ turns, while in 4 cases, in which no strangulation took place the average turns were 1½. As a rule the cases without strangulation had long pedicles. In my case the strangulated tube had a pedicle about two inches long, while the unstrangulated tube had a pedicle of at least six inches.

The seat of torsion was 30 times on the right — compared with only 19 on the left, while it was bilateral in 4. This tendency of the right tube to become twisted rather than the left is rather hard to explain, as left tubes are certainly more apt to become inflamed than are the ones on the right. It may, perhaps, be due to the anatomically greater play of the right mesosalpinx.

The tendency is unfortunate, owing to the probability of confusion with appendicitis.

The ovary is given as involved in 18 cases and not in 22. Apparently the symptoms were more severe when it was involved than when it escaped, as was natural. The immediate and definite result of strangulation of a tube is an effusion of blood into its cavity, combined with extravasations into its walls, adhesions to surrounding parts and very probable subsequent infection from the intestine. Thus while the 62 cases under consideration are given as: Hematosalpinx, 33; hydrosalpinx, 13; pyosalpinx, 11; extra-uterine pregnancy, 2; carcinoma, 1; sarcoma, 1; cyst of tubal wall, 1 (Stoltz), an analysis of the 13 cases called hydrosalpinx shows that in 4 there was no strangulation, while in several others there was more or less extravasation into the tubal wall, and in 2 the operation took place before there was time for a change from hydro- to hemato-salpinx. Practically, then, in all cases where strangulation occurs, a hematosalpinx will be found, and in fact it is highly probable that many of the cases carelessly regarded as extra-uterine pregnancies because a tube was found filled with blood, were in reality cases of strangulation by torsion.

The only treatment of this accident is naturally immediate operation. In the 62 cases under consideration there were only 2 deaths, that of Warneck (carcinoma) from ileus fourteen days after operation and that of Poirier (hematosalpinx) in forty-eight hours, from unknown cause.

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THE OPEN-AIR TREATMENT OF TUBERCULOSIS.*

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THE treatment of pulmonary tuberculosis to-day means, in a general way, the same thing in the minds of everybody, — out of doors, fresh air, milk and eggs. These things have been so thoroughly preached by the medical profession that laymen know the general methods as well as we who preach. All drugs have been tried in vain. Specifics have had their day and have been discarded. Even climates have been relegated to the second or third place, since the experiment of institutions like that at Sharon have proved that sanatoria near at hand will give such excellent results. Not that the favorable influence of climate is to be entirely counted out, especially in selected cases, but the larger fact has been learned that with or without the advantage of a change of climate, the hygienic mode of living, so aptly called "elaborated common sense," is absolutely necessary in every place. The present day specifics, which are, for the most part, bacteriological in character, are still in the experimental stage. Whether they will stand the test or be forgotten with the rest of the "cures," time alone will tell. There is a large field for research at present and many problems are occupying the minds of men interested in tuberculosis, both in this country and abroad. Some reports are already at hand. Tuberculin has been tried and it is found to be of value in certain cases, but not in all, while the different sera, of which we are hearing so much at present, are as yet praised most loudly by those who have a money interest in their sale; therefore the results are not to be taken without some hesitation, although some of the reports are certainly striking. Doubtless, in good time, some therapy will be brought forward that will be accepted by every one as vaccination and diphtheria antitoxin are now accepted. I doubt, however, if there ever comes a time when any drug or any toxin or antitoxin will take the place of hygienic living. And it is because the details of this life are so important that it is well to go over them again, even at the risk of appearing wearisome.

The three essentials of the present day treatment of tuberculosis are fresh air, good food and carefully regulated exertion. It matters but little how these things are obtained, so long as the result is good. A patient may be treated on a house top, or in a tent, or in a shack in the back yard, or he may be the inmate of a well appointed sanatorium. If the air is fresh and pure, the possibilities are as good in one place as another. It certainly is an advantage if the patient is in

* Read before the Providence Medical Association, Dec. 4, 1905.

an environment where the air is dry, the soil porous, the site somewhat elevated above sea level and the temperature equable, but surprisingly good results can be obtained in decidedly poor environment, such as is found in large cities or near the coast. Pratt has experimented this last summer with some twenty-five patients in the heart of the city of Boston, and his report is certainly striking. The patients were among the poorest classes and could not go away. They slept at night in tents on the house tops or in back yards, and spent all their days out of doors. They had all there was of a not over good quality of air, and the result shows that even the poorest person, provided he can spend the time to get well, need not give up hope.

In making the patient take the fresh-air treatment, there are one or two points that are especially noteworthy. One is that the nearer the treatment is kept up twenty-four hours out of the day, the better. It is not sufficient that the patient spend his days out of doors and sleep at night with the windows closed. Nor should a patient work by day if it can by any means be avoided, and take the air only by night. It is impossible to give an overdose of fresh air, and the ideal arrangement allows only the sky for a roof at all times except in time of storm, and then only so much shelter as is necessary to keep out the wet. The devices for shelters are legion, and they fulfill the object for which they are constructed with more or less merit. Other things being equal, the simplest device is usually the best. Treatment can be fully as well, if not better, carried out in the lean-tos that have been devised by Dr. King of Loomis Sanatorium, or the shacks of Dr. Millet of Brockton, as in the most costly building.

Another point to be noted is that cold weather puts no hindrance to staying out, provided there is plenty of covering over the body, so that it does not feel chilled at any time. All consideration of personal appearance has to be put in abeyance, for rarely can one be comfortable out of doors in winter and look anything but bundled up. It is the physician's business to insist that the clothing be warm enough. The fact that the patient has always worn the same weight underclothes summer and winter is no argument, for cold will creep in mercilessly after sitting out for a few hours with the mercury at zero, unless there is plenty of woolen next the body. I have had to advise some to wear more than one suit of underclothing at a time and two or three pairs of stockings. The feet must be encased in heavy shoes and overshoes, or, still better, in old-fashioned felt shoes. At night the bed should be made up with a heavy blanket over the mattress, for much cold will otherwise come from below. The patient will also find that it is a great comfort to have a blanket laid loosely between the sheets, so that the body may be rolled in it. Even a sleeping bag may be employed, and the use of a night cap is not to be scorned, while, of course, hot water-bottles are of great value night and day. With these precau-

tions, it is rare that any great discomfort is experienced, and usually the life is enjoyed.

As regards feeding, I am sure that the final word has not been said, and possibly it never can be said. Patients differ so much, one from another, in their power to take and assimilate food that no fixed rules can be laid down. In some places it is still the custom to force the patient to take enormous amounts of food. In consequence, the gain in weight is usually great; but one cannot help feeling that the stomach is too frequently upset by this method, and in the end the gain in health no more than when the digestion is less heavily taxed. Patients are always expected to force themselves to a certain extent; the meals are always larger than those to which they have been accustomed. But with this moderate forcing the gain in weight and strength is, on the whole, as satisfactory as under the first course mentioned, while the dangers of crowding the patient are obviated. At Sharon we give food seven times a day. At seven in the morning and at nine at night a glass of milk is given out. In the middle of the forenoon and middle of the afternoon there are lunches of milk and one raw egg. These are supplemental to the three regular meals, all of which include meat of some kind. This dietary has to be modified in certain cases, for there are some that cannot take milk and eggs without much difficulty, and there are others who have gained so much that it seems best to omit the lunches altogether, directing the attention to making the tissues harder rather than to putting on more fat. In some institutions the caloric value of the food ingested is taken as the guide to determine the consistency of the diet. Such observations are of great value and will help in the future to make the feeding of tubercular patients more easy. Goodbody, Bardswell and Chapman conclude, from observing six patients, that the diet which gave the best results consisted of 120 gm. proteid, 110 gm. fat, 300 gm. carbohydrates.¹

This table is noteworthy on account of the large amount of fat that it contains, and differs especially in this respect from what is usually taken as the caloric needs of an ordinary healthy man. For a long time it has been known that consumptives can take fat more readily than normal individuals. Many make great point of this, giving much bacon and other fatty meats, butter, cod liver oil and olive oil. The reaction against giving cod liver oil has begun. Possibly the wisdom of giving the other fats will be called in question as time goes on. At Sharon there has never been any especial point made of fat, and still the gains have been satisfactory in most cases.

The amount of food in the list quoted is far below what is ordinarily thought necessary, although it is in excess of what patients can take solely to their own desires. It has been proved, however, that with a moderate degree of restriction not only can larger amounts of food be taken than the appetite desires, but a better quality of

¹ Med. Clin., 1900, 1, 100.

of the nitrogen and fat is absorbed than with a small diet. The object to be gained is a moderate increase of body weight over what would be normal for the individual with whom we are dealing, and when that object has been gained, it is well to cut down on the amount of food, for it is certain that patients can at times gain much flesh and still run down hill. Personally, I think that gains of one or two pounds a week are as much as could be desired, although we hear of patients who gain six and seven pounds.

The giving of eggs has doubtless been overdone. Some patients take so many that they loathe the sight of more. Three or four a day are a goodly quantity, and if the number is not increased beyond this, there is usually no difficulty in giving them for a long time. As for milk (for milk and eggs go hand in hand in the treatment), it is the most important single article of food and hardly to be dispensed with. From one to two quarts a day are the common thing to give, and with a careful adjustment of the amount taken the weight can frequently be made less or more at will. It is our routine practice to give each day about three pints of milk and two eggs to a patient.

Regulation of the amount of exertion is very important, and while it is generally better understood than formerly, there are still patients who are injured by being allowed to do too much. The majority of phthisical patients feel so well that it is hard to keep them within bounds. Even patients with temperature are not sick enough in their own opinion to stay in bed, and after they have so far gained in strength that they may be allowed to go about somewhat, it is even harder for the physician to hold them back. Nevertheless it is true that a slight indiscretion in the amount of exercise will at times be the turning point and send an otherwise favorable case down hill. I have to confess that I have on two or three occasions allowed and even been the witness of over-exertion in cases that have from that moment grown worse, where before there seemed to be at least a fighting show for the patients. Such experiences make one over-cautious, it may be, and still it is well to remember that few are injured by restraint.

As a general rule it may be said that when a patient presents fever he should be put to bed and kept there till the fever is abated. This may take weeks and be irksome to both patient and physician. But there is no reason why the treatment should not be somewhat like that of a typhoid convalescent who does not leave the bed till the temperature has been normal for at least a week. In some cases it is true that patients will not do well till they are allowed about, but for a routine measure, rest in bed is invaluable. We have had patients with advanced signs in the chest and with a temperature of over 102 at entrance. And we have kept them in bed for over two months, letting them see visitors for only a few minutes at infrequent intervals, and we have sent such cases out with the disease arrested. To be sure there have

been others that have not responded to this regimen, but it is rare that a case will do better by any other means if the condition is such as to warrant trying the rest cure.

When the patient is convalescent, the question of the kind and amount of exertion comes up. Walking is the most easily regulated and for most cases it is the best kind of exercise, until the disease is well on toward arrest. These walks should be prescribed as carefully as medicine, and the direction of the walk should be indicated, so that there may be no undue strain in getting home. In a general way, it may be said that two short walks are better than one long one if there is any tendency to weariness. As Brehmer said: "A healthy man sits down because he is tired; the consumptive should sit down so as not to become tired." When the patient has gained in strength to a large degree, the amount of exercise can be increased and the kind varied. Until the disease has been cured, however, it is unwise to advise the more violent sports such as tennis or rowing. Temperance must be shown even in the most simple forms of exercise. Patients have injured themselves by too much sewing or knitting or basket making, usually because they keep too steadily at it without laying the work down. For all patients it is well to prescribe a period of rest each day for at least two hours. At Sharon this is taken at one time in the afternoon. Occasionally it is necessary to supplement this with a rest before the noonday and evening meals, for the digestion is aided in certain cases by this means.

It is still a moot question whether pulmonary gymnastics shall be advised or not. Doubtless, where there is rapidly advancing disease, it is not well to prescribe deep breathing, especially if there is a pleurisy. Indeed, nature gives us the cue in many cases and by pain limits the respiration. In other cases, however, there can be no objection to moderately deep breathing, for by it the air of the lungs is better aerated, and certainly we cannot expect to get rid of diseased tissue in the presence of poor blood. It has been recently proven, also, that the secretion of the bronchial tubes is gotten rid of not so much by the action of the ciliated epithelium as by the pump-like action of the bronchial muscles.² This action closes the bronchioles during expiration and forces out any secretion that may be present. By moderately deep breathing, therefore, this pump-like action would be favored, and thus sputa would be more easily raised. Be this as it may, we have always advised deep breathing except, as stated, in rapidly advancing cases and in those with pleurisy, and we have not only never seen ill results follow, but the patients have gained with the practice. They are advised to take long breaths at least three times a day and oftener if they can remember to do so.

Carswell wrote in 1836: "Pathological anatomy has never afforded stronger evidence of the curability of a disease than in the case of phthi-

²Ingals: Jour. Am. Med. Assn., Oct. 28, 1905.

sis," and we all know that the majority of cases will get well if taken in an incipient stage, and if the points in treatment as above stated are carried out. This necessitates close supervision, for every particular point must be gone over many times, and certain details have to be modified from time to time to suit individual needs. This need of supervision is still frequently not made clear, and even to-day we hear of patients who are sent away with the general direction to live out of doors and take milk and eggs. Such advice is never to the best interest of the patient and frequently is disastrous to the doctor as well. Solly has shown that of patients coming to Colorado, the mortality is much less among those under supervision than among those who consult a physician only when they think it necessary. This is natural, since with tuberculosis it is so frequently needful to change certain details of the treatment for particular patients and at different times for the same patient. Doubtless it is far and away to the patient's interest to spend a time at some properly conducted sanatorium, at least in the beginning. Here he can learn all the necessary details of the life as it would be impossible for him to do elsewhere, even with good medical attention and counsel. Manifestly this cannot be in the majority of cases, and it is usually the case that needs it most that can get away least easily. Reliance must then be given to such shifts as the doctor and patient can agree upon, the former always remembering that the earlier he makes the diagnosis and brings the patient under treatment the better, and the latter realizing that he must not try to work alone, but must rely on his medical adviser in all things.

THE SUCCESSFUL TREATMENT OF TUBERCULOSIS

BY ALBERT E. RIVERS, M.D., BOSTON

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FIVE years ago the writer was called upon to treat a case of pulmonary tuberculosis in a far advanced stage. The patient had been treated at the Rutland Sanatorium without success and had been in Asheville, N. C., with a like result. It was at this time that I began to read with absorbing interest the reports of Dr. John Russell of the New York post-graduate dispensary. My interest was awakened to the extent of proposing to this patient a trial of the treatment as outlined in this paper and the experience then gained made me a convert to the method.

The theory upon which the originator of this method bases his treatment is that pulmonary tuberculosis is the result primarily of malnutrition. Further that the malnutrition which favors the growth and development of tubercle bacilli differs from other forms of malnutrition, namely, scurvy and rickets. The malnutrition of scurvy differs from that of rickets and both are produced by a deficiency of suitable food.

Malnutrition is defined as a condition of starvation, either partial or complete. All physiologists teach that to maintain proper nutrition, it is necessary to partake of a diet composed of proteins, carbohydrates, fats and salts in certain proportions; consequently, if the necessary proportion of any one of these essential elements of food stuffs is not maintained, nutrition suffers, and the degree must vary with the variation in the supply of an essential element. The form of malnutrition is determined by the definite deficient element. As yet we do not know the element lacking in scurvy, but it is well known what brilliant results follow the administration of certain foods.

Beside an insufficient supply of suitable food, malnutrition depends as surely upon defective absorption. Now to the careful observer of tubercular symptoms one of the commonest is the great distaste, if not entire repugnance for, fat foods. Patients almost without exception cut the fat away from their meats. This distaste arises from the inability to digest fat, and Russell believes, and I am now prepared to agree with him, that the malnutrition which renders the tissues favorable to the growth of the tubercle bacilli is produced by a deficient absorption of fat and that the successful administration of fat will correct this form of malnutrition. The conditions being no longer favorable the bacilli will not thrive and the disease is relieved.

Now and then there is a patient who, although to all outward appearances is well nourished and robust, will suddenly develop tuberculosis. This can be explained by nature's power of compensation, for both carbohydrates and proteins may be transformed into fat, and in this way a deficiency in fat is compensated for; but either compensatory fat is wanting in some essential quality, or else its manufacture weakens nutritive changes at other points.

Now, as has been said, the cure depends upon the successful administration of fats, and to accomplish this several things have been found necessary; namely, that a large part of the fat given shall be previously rendered absorbable or pre-digested, that a large quantity be given daily, and that there be a great variety of fat in the diet. Russell has found by experimenting that the greater the variety in the fats ingested, the greater the opportunity presented to the body in the process of selecting its necessary proportion of constituents, and the emulsion of mixed fats which bears his name contains beef-fat, coconut, peanut and olive oils and a small quantity of clove oil. The emulsifying favors the absorption, and for the sake of quantity and variety, raw eggs and milk are added to the diet. During the first week of treatment the emulsion alone is given, beginning with one-half ounce twice a day, increasing a half-ounce on each dose every three days until two ounces are administered twice a day. It is taken from one and one-half to two hours after the morning and evening meals. By this time the absorbents are accustomed to taking up fat and the patient is instructed to

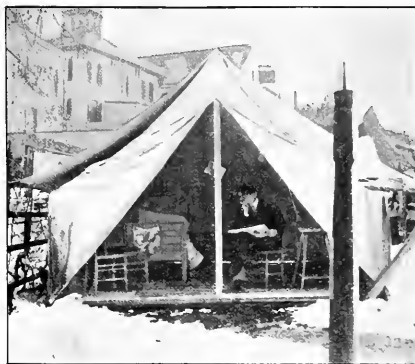
take immediately after each meal one raw egg beaten in a glass of milk, and at the end of every three days add one more egg after each meal until four eggs are taken three times a day; then one egg additional is given at bed-time and this dose increased by one, until four eggs are taken four times a day. The next increase is to add one egg to any of the two meals thought most desirable. This last increase makes the total eighteen eggs a day. As the eggs increase the amount of milk is decreased, but never less than four ounces is used, and a bowl is employed instead of a glass. With a patient on this large amount of food a frequent unloading of the bowel is necessary, and it is here that the physician must have the courage of his convictions. He must explain and see to it that the patient understands that no matter how many times a day there is a movement of the bowels, if there is nausea, vomiting, abdominal pain or distress, or diarrhoea, that these conditions call for castor oil. It is necessary for some patients to take it in full doses every day; others require it only twice a week. On the days that castor oil is not taken, a pill such as the cascara or compound rhubarb pill is given. There are some patients who cannot take milk and eggs without nausea and vomiting, and who are not relieved by cathartics. For such, a mixture of sodium phosphate and sodium carbonate, 2 gr. to the teaspoonful of water, is given. From one to three teaspoonfuls is added to each glassful of the egg mixture. By these methods I have yet to find the patient who cannot be prevailed upon to take the requisite amount of food.

In well advanced cases and those which are running a high temperature, the patient should be confined to bed and given the emulsion and milk only. All other food is withdrawn. It is usually necessary to keep patients in bed from six to eight weeks. They are allowed to get up to use a commode conveniently placed to the bed. We begin by giving one quart of milk a day and gradually increasing the amount until our patient is taking five quarts daily. The emulsion is given as previously stated. At the end of about five weeks solid food is cautiously added, and the amount of milk diminished. When the patient has arrived at the point of taking his three meals a day, the forced feeding with the eggs is commenced. It has been found that in some patients after taking eggs for a long time, the condition of the lungs instead of improving commences to advance. The eggs are then withdrawn and the quantity of milk is increased, and cheese (I prefer the Swiss Gruyere) is added. The amount of animal flesh is also reduced to a minimum.

My personal experience is that most patients do well on the egg diet. Those patients who are lithemic do better on the milk and cheese. In all classes of cases one of the required conditions is, that the patient should remain out of doors constantly. The absorption of fat is greatly aided by an open-air life.

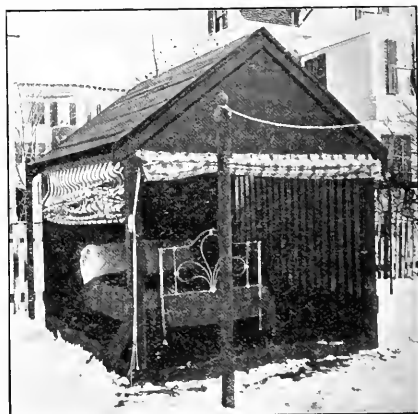
The illustrations show the manner in which I

require my patients to live. The tent has a wooden floor and end and costs twenty-five dollars. The shack has wooden floor, end and roof. The sides and other end are so curtained that they may be raised or lowered at will. The cost is thirty-five dollars.



Patients who live in the poorer districts can have the little piazza which is usually built on the back of tenement houses curtained with canvas and a bed placed there.

All patients are instructed as to the care of their sputum. Dishes are reserved for the patient's use and once every day those dishes are boiled. The patient's mouth is to be frequently rinsed in boric acid solution, and the face and



hands kept scrupulously clean. Of all the symptoms common to this disease but one is specially treated, and that one is hemorrhage. If a patient has a hemorrhage he is given ten grains of calcium chloride, in a teaspoonful of water, with each meal. This is continued for a long time, usually several months.

I believe this treatment to be applicable not only to uncomplicated pulmonary tuberculosis, but also to any form of tuberculosis, surgical as well as medical, and its more frequent employment will diminish the number of operations for tuberculosis. The following table will show that I have secured recoveries from pulmonary tuberculosis, tubercular peritonitis, periostitis, fistula and tubercular abscess. In these cases all physical signs have disappeared and there are no tubercle bacilli to be found in the sputum. They have been well for two years.

I have several more cases in whom there have been no physical signs and no bacilli for almost a year, and I have a number of cases now under treatment, all of whom are doing well.

I believe this plan of treatment to be very superior to climatic or sanitarium treatment. In sending a patient to another climate we ask him to make sacrifices which he is often unable to make. Moreover, we add the element of nostalgia, which is a very serious one in an already depressed patient, for, "Be it ever so humble

edge that he has guided many formerly hopelessly incurable patients to a healthy life, and thus done his share in eradicating the "great white plague"; that he has done by his fellow man as he would be done by. This is making use of his science in the spirit of *Christianity*, the only true *Christian Science*. Oh! How superior to that "bubble of the dream box," Eddyism.

Clinical Department.

A REVIEW OF FIVE CASES OF OVARIAN CYST WITH TWISTED PEDICLE.*

BY CHARLES M. GREEN, M.D., BOSTON.

Cysts of axial rotation of ovarian cysts, with twisting of the pedicle, are not as frequently observed as formerly, for the obvious reason that in these days such tumors are discovered and removed early, before the size of the cyst and other conditions that may produce rotation become operative. It may, therefore, be of interest briefly to review the following five cases which

| | No. | Sex | Occupation | Condition | Weight Beginning of Treatment 102 lbs. | Weight End of Treatment 150 lbs. |
|------|------|-------|----------------|---|---|---|
| Case | I | Man | Cigar maker | Pulmonary tuberculosis | | |
| " | II | Woman | None | Pulmonary tuberculosis Tubercular abscess of thigh Severe hemorrhages | 78 .. | 152 .. |
| " | III | Woman | None | Tubercular peritonitis | 75 .. | 118 .. |
| " | IV | Woman | School teacher | Pulmonary tuberculosis | 102 .. | 146 .. |
| " | V | Woman | Bookkeeper | Pulmonary tuberculosis | 111 .. | 138 .. |
| " | VI | Woman | None | Pulmonary tuberculosis Fistula | 75 .. | 155 .. |
| " | VII | Child | None | Tubercular periostitis | 25 .. | 45 .. |
| " | VIII | Man | Lawyer | Pulmonary tuberculosis | 130 .. | 175 .. |
| " | IX | Man | Clerk | Pulmonary tuberculosis | 108 .. | 128 .. |

there's no place like home." These same remarks are also true of a sanitarium, even if it be situated in the patient's home city. Furthermore, by treating patients at home we are practically instructing whole neighborhoods in the prevention and care of tuberculosis, and thus accomplishing much toward stamping out the disease in the only manner in which it will ever be done, viz.: by *education*. If philanthropists would donate their money to the establishment of a fund for the supplying of fresh eggs and pure milk to the tubercular poor, I believe very much more would be accomplished than by the establishment of sanatoria.

One important factor in the successful carrying out of this treatment is the personality of the physician. He must be kindly, sympathetic yet firm, and have the courage to maintain discipline. He should state to his patient that he is tubercular and explain to him fully the treatment and all its hardships. It is not enough to tell a patient in a general way to take milk and eggs and to keep in the open air. The doctor must enter upon the systematic treatment as above outlined, examine his patient frequently, avoid the administration of drugs, keep his patient encouraged, acknowledging no outcome but a successful one. If the physician will do this he will go to bed a tired man indeed, but happy in the satisfaction of a day well spent, and as the years pass by, he will be rewarded by the knowl-

edge that he has guided many formerly hopelessly incurable patients to a healthy life, and thus done his share in eradicating the "great white plague"; that he has done by his fellow man as he would be done by. This is making use of his science in the spirit of *Christianity*, the only true *Christian Science*. Oh! How superior to that "bubble of the dream box," Eddyism.

CASE I. L. S., aged thirty-eight, had had six full-term, normal labors, the last, five months prior to my seeing her. She sought advice on account of an abdominal tumor which she had first noticed a month or two after her last puerperium; during these three or four months she had observed that the tumor was growing larger. The menstrual periods were normal, and she complained of no symptoms except constipation. The uterus was found to be of normal size and in normal axis; in the right lower quadrant was a movable tumor, estimated to be five to six inches in diameter, and apparently a unilocular cyst of the right ovary.

On exposing the tumor at operation four days later, it was found to have made one complete axial rotation; the tube was enlarged and adherent over the cyst. There were no adhesions whatever, and the tumor was untwisted and removed without tapping. The convalescence was uneventful.

The cyst had a thick wall, measured 18 cm. in diameter, was of purple color, and contained thick dark brown fluid. Along one side was a pear-shaped thickening, 12 cm. long, made up of small cysts filled with rather soft, red tissue and clotted blood.

The case represents one of the simpler type of axial rotation. The twisting of the pedicle was obviously a gradual one, and therefore gave no

* Read before the Obstetrical Society of Boston, Dec. 26, 1905.

to no sudden or painful symptoms. While there was enough obstruction to circulation to cause passive congestion, moderate intracystic hemorrhage, and gradual enlargement of the tumor, there was not enough torsion to lead to strangulation, adhesions, or degenerative changes. As to the cause of the rotation in this case, we have present two of the factors mentioned as possible causes, namely, pregnancy, and the pear-shaped thickening along one side of the cyst, which may have been effective in producing disturbance of equilibrium. Incidentally it may be mentioned that the left ovary in this case contained a hemorrhagic cyst twice the size of a normal ovary; but the tumor was too small to have played any part in the rotation of the other ovary, and was not itself rotated. This left ovary was resected and with its tube left *in situ*.

CASE II. G. B., aged twenty-one, single, had had pain in the left iliac region periodically for the past eighteen months; menstruation had been regular, and bowels constipated. At the time of my first visit the pain was very severe; pulse 120, temperature 100° F. Examination revealed a fluctuant tumor as large as a five months' pregnant uterus, dipping into the anterior vaginal fornix, and extending from the left lower quadrant to the right of the median line. The cervix was small and central; but the uterine body was obscured by what was obviously a cyst of the left ovary in front of it.

On making the abdominal incision, it was found that the tumor was everywhere adherent to the parietal peritoneum, to omentum, and posteriorly to intestine. After freeing all but the intestinal adhesions, it was found advisable partially to empty the cyst in order to gain room to separate the intestinal adhesions by sight. One and one half-pints of bloody fluid were removed, the intestine freed, and the pedicle tied off. The pedicle was 2 cm. thick, and the number of twists was not definitely made out. The right ovary, enlarged to 4 cm. in diameter, was cystic, and with its tube was removed. The whole parietal peritoneum was reddened and oozed somewhat, but the abdomen was closed without drainage; the convalescence was normal. The cyst was dark purple in color, with dark red thickened walls, and measured 14 cm. in diameter; it contained coagulated, red, jelly-like material, and close by the twisted pedicle was a portion of ovary 3.5 cm. in length, dark red on section. Pathological diagnosis: hemorrhagic ovarian cyst.

In this case the axial rotation was obviously slow and gradual, and the torsion was much greater and the pathological changes more extensive than in Case I. The cyst wall must have derived a considerable nutrition from the extensive peritoneal adhesions, and it showed no degenerative changes. As to the cause of the rotation in this case, it is idle to speculate.

CASE III. C. M. R., aged twenty-five, married two years, but never pregnant, one week before my visit was suddenly seized with pain in the left lower quadrant; the pain was steady in character and had persisted since the invasion. She began to flow on the fourth day, less than three weeks after her last preceding period. The abdomen had grown larger within the past three days. There had been no vomiting or chills; pulse 110, temperature 101.2° F. The cervix was elevated low in the pelvis, the fundus was not

made out. The hypogastrium was filled with a rounded, symmetrical tumor rising to the umbilicus, flat on percussion, with tympany in the flanks, and with marked fluctuation wave, apparently a unilocular cyst of the left ovary.

Operation the following day revealed a dark, congested-looking tumor of the left ovary, with an axial rotation of 180°. The cyst was lightly adherent in many places, and firmly adherent over its posterior wall. It was at first hoped to deliver the tumor intact; but the twisted pedicle was not easily accessible owing to adhesions, and the cyst was therefore emptied of three pints of dark red fluid. The left broad ligament was then tied off, and as the adhesions were so dense as to endanger the bowel by forcible separation, the outer layer of the cyst was incised and the tumor enucleated. The left tube was not recognized. The right tube was the seat of a chronic process and evidently contained pus; the right ovary was cystic. This tube and ovary were removed without rupture, but some of the contents of the strangulated left cyst had been spilled into the pelvis, and there was considerable oozing from the separated adhesions; a gauze drain was therefore placed behind each broad ligament. The drains were started on the fourth day; the convalescence proceeded uneventfully, but was protracted to between seven and eight weeks by the infection of the lower half of the incision.

The right tube was 15 cm. in length, fluctuant, much dilated, tortuous, varying from 1 to 3 cm. in diameter, and filled with thick, bloody, purulent fluid containing pus cells and Gram staining bacilli in chains and clumps. The right ovary was practically made up of a thin, translucent cyst, 5 cm. in diameter, with a small amount of apparently normal ovarian tissue at one side. Whether this tubo-ovarian mass could have had any effective influence in causing the rotation of the larger cyst on the other side is a matter of speculation. The collapsed cyst of the left ovary was about 15 cm. in diameter, with a smooth, dark red outer surface and tough fibrous wall. The inner surface was lined with a greasy, grayish-white, friable pseudomembrane, in which the bacillus *proteus vulgaris* was found. Comparing these pathological conditions with the symptoms of the case, it seems obvious that this was an instance of rapid torsion, attended by acute enlargement of the cyst, the formation of adhesions and the rapid development of necrotic changes.

CASE IV. M. M., aged twenty-nine, had had, six years before, a normal, full-term labor, with afebrile convalescence. For the past six months she had had more or less pain low down on the right side, and had noticed a "swelling" in this region for the last few months; otherwise she had been in good health. The abdomen was enlarged by a tumor reaching to the umbilicus and extending somewhat more towards the right than to the left. The abdominal wall was so thick that no fluctuation wave could be made out; but the tumor did not feel as hard as a fibroid. The uterus was in normal axis and of normal depth. The abdomen was opened with a presumptive diagnosis of cyst of the right ovary, with a possibility of fibroid. A thick-walled cyst of the left ovary was found, adherent over its entire surface. The pedicle was much thickened and twisted, but I did not take the time to determine the number of rotations. The wall was so thick that it had to be incised before the trocar would enter; the contents were too thick to flow through the trocar, being of a mushy, hasty-pudding character and containing hair; they were therefore expressed and none allowed to escape into the abdomen. The cyst was drawn up as the posterior omental adhesions were separated, and the thick, twisted pedicle plaited off.

The left ovary was enlarged to 2½ inches and cystic, and was also removed. The pelvis was found to contain a considerable amount of material similar to the contents of the dermoid cyst, and at the time it was not apparent how it came there, in view of the fact that none was spilled when the cyst was emptied. The cavity was cleansed and drained and the abdomen closed. The patient made a good after recovery, but the pulse rose to 150 on the night after operation. There was some abdominal pain and moderate distention, relieved by enemata; the abdomen was always soft and not tender. The temperature had risen to 101° F. on the second day, with pulse at 160, and the patient died, apparently of shock, on the third day.

The cyst measured 22 by 18 cm.; color, reddish to gray. On one side a thick pedicle with injected vessels and thickened walls. The whole surface of the cyst was roughened by adhesions, and the wall was 0.4 to 1.5 cm. in thickness. The cavity was filled with soft, yellowish, fatty material, showing cholesterol crystals, and embedded in this material were several balls of very coarse, golden-yellow hair; no bone or teeth were found. On what was, at the time of operation, the posterior surface of this cyst was a smaller cyst containing a thick mass of inspissated material, but no hair. On the discovery of this subsidiary cyst, the presence of the material found free in the pelvis and above alluded to seemed to me adequately accounted for. It seemed evident that this smaller cyst had originally contained the material, and had ruptured long enough before operation for the opening to have closed before removal, or to have escaped detection afterwards. Pathological diagnosis: Dermoid cyst, with necrosis and inflammation.

All authorities agree that "dermoid cysts are more likely to undergo axial rotation than other ovarian tumors, and hence twisting of the pedicle is comparatively frequent in this variety of cystic growth."¹ Malcolm Storer, in his valuable paper on axial rotation read before this Society nine years ago,² states that "In about 83% of the 248 cases of torsion collected by him from various sources, the tumor was either polycystic, solid, or dermoid, that is, presumably, of more or less irregular outline and varying weight, the irregularities affording convenient points for the exercise of the force needed to produce rotation, and the varying weight tending to produce disturbance of equilibrium."

CASE V. E. P., aged fifty-nine, had had one normal labor and afebrile puerperium in 1872, and had been a widow for two years. She had not menstruated for fourteen years. She had had good general health, and said she had never had an attack similar to the present one. Three days before I saw her she had been seized with excruciating pain in the left lower quadrant; the pain lasted one day, and the second day thereafter the pain returned and became general over the whole abdomen. There were no chills, but she had vomited and had had slight fever. The abdomen was distended, tympanitic throughout, and tender. The vaginal vault was puckered, and in the apex was a small atrophic cervix. On the left was a mass reaching nearly to the umbilicus and slightly movable independently of the uterus. The following day there was slight jaundice, which disappeared the next day; pain disappeared in a few days. The diagnosis lay, to my mind, between cyst of the left ovary and pedun-

culated subserous fibroid, with a possibility of malignant growth; and operation was advised and accepted.

On opening the peritoneum a mass was found made up of adherent omentum, intestine, and a tumor proceeding from the left broad ligament; the tumor had the shape and appearance of an enormously distended Fallopian tube; the ovary could not be differentiated and was presumably involved in the tubal mass. The tumor had rotated once around from without inward, and the pedicle thus twisted was so small that it was tied off with a single ligature. The mass had a necrotic appearance, and it was obvious that degenerative changes must have taken place in consequence of the torsion of the pedicle. The right appendages were shrivelled and adherent, and were not disturbed. On the anterior surface of the atrophied uterus was a sessile, egg-shaped myoma, 4.5 by 3 cm., which was enucleated and the bed closed in with buried sutures. The abdomen was closed without drainage, and the patient made a rapid and uneventful convalescence.

Subsequent examination of the strangulated tumor showed that it consisted of tube and ovary; the ovary, cystic, the capsule-like wall, tense, dull, dark red in color, slightly roughened by exudation, with dimensions 10.5 by 8 cm.; the contents consisted of dark, reddish-brown fluid in which were numerous blood cells and cholesterol crystals. The tube measured 7.5 by 1.8 cm., with walls dark red and softened and lumen distended with dark blood.

On comparing the pathological conditions found with the patient's statement of her symptoms, it seems incredible that such extensive changes could have occurred in so short a time. It is a fair inference that the ovary was cystic and that the tube had been the seat of a chronic process for perhaps some time without having given rise to symptoms that led the patient to seek advice. And it is quite probable that the attack of excruciating pain occurred shortly after a sudden axial rotation of the tubo-ovarian mass, from whatsoever cause, with the consequent torsion of the pedicle, resulting in hemorrhage into the lumen of both tube and ovary, and in the inflammatory and necrotic changes noted.

A CASE OF ACUTE TORSION OF THE FALLOPIAN TUBE WITH HEMATOSALPINX.*

By W. L. BURGAGE, M.D., BOSTON.

THE patient, Mrs. H. M. W., twenty-six years of age, first came under observation Dec. 9, 1898. She was a blonde of average height, poorly nourished and anemic; five brothers and sisters enjoyed good health; her father died of cancer at sixty-nine years. She had been married two years and had not been pregnant, always considered herself delicate; menstruation painful for the first twenty-four hours, every twenty-eight days, five to six days' flow, three to four napkins. The catamenia had been irregular up to four years previously. She applied for treatment because of dysmenorrhea. The uterus was found to be ante-flexed, enlarged, the cavity measured 4.3 inches and retro-positioned, the right ovary was enlarged but not enlarged and not adherent; cavity of the uterus very sensitive to the sound and bleeding easily. I did a Dudley operation at this time, and careful examination under ether confirmed the diagnosis. The result was good and the patient was

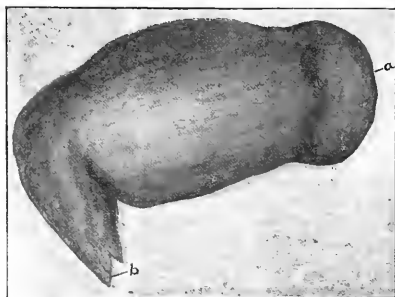
¹ Ashton's Practice of Gynecology.

² Boston Medical and Surgical Journal, Nov. 5, 1896.

* Read before the Obstetrical Society of Boston, Jan. 23, 1899.

relieved. She was seen several times in the spring of 1899.

Nov. 20, 1899, Mrs. W. was seized with severe abdominal pain accompanied by intense nausea and was sent to St. Elizabeth's Hospital as a case of pelvic abscess on Nov. 26. I saw her on entrance and made out a tumor the size of a duck's egg in the region of the right tube. It was exquisitely sensitive to light pressure; there seemed to be no exudate about it or about the uterus; the temperature was under 100°; pulse good; face had an expression of great suffering.



Right Fallopian tube. Case of Mrs. H. M. W. Reduced about one third. Exact size—length 9.5 cm., with 4.5 cm. thickness 3.5 cm.; color, dark reddish brown; consistency, soft, fluctuating. a, Fimbriated end. b, Isthmus where twist of two turns to the right was situated.

An abdominal operation was performed on Nov. 28, and the hematosalpinx removed, and both ovaries, which were riddled with small cysts, were resected. The left tube was normal. There was no free blood in the peritoneal cavity; the omentum was thin and adherent to the pelvic brim and to the distended right tube; the tubal tumor, 9.5 cm. long and 4.5 cm. wide, was adherent to the bladder over a broad surface. There were two complete turns like the thread of a right-hand screw in the pedicle of the tube, which was formed at its isthmus by the tube and its mesosalpinx. The hematosalpinx was dark reddish brown in color, of a soft fluctuating consistency and measured 9.5 by 4.5 by 3.5 cm. When opened the pathologist found only blood clot but no chorionic villi. The patient made a normal convalescence.

In this case the torsion was undoubtedly acute. The patient had been seen a year previously, had been examined under ether and the diagnosis made at that time was unquestionably correct because of the thinness of the abdominal walls and the absence of fat in and about the pelvis. She had been examined a few months before the onset of the acute symptoms and the pelvic condition was as noted. During the time she was under observation,—from 1898 to 1902,—there were no symptoms or signs of pregnancy and no indications of gonorrhea. We are left at sea as to the cause of the hematosalpinx and of the torsion of the tube.

THE TRAINING OF NURSES. — According to the *Medical Record*, on March 29 a symposium on the training of nurses will be held at the New York Academy of Medicine, to discuss the question of the overtraining of nurses and to suggest remedies.

Medical Progress.

PROGRESS IN THORACIC DISEASES.

BY MARK W. RICHARDSON, M.D., BOSTON.

INTRATHORACIC DERMOID CYST.

SHAW and Williams¹ report a case of intra-thoracic dermoid cyst, together with a review of the previous literature on the subject. Only 35 cases are on record. The age at which patients first seek treatment may be anywhere from twenty to sixty. Generally they are first seen between the ages of twenty and thirty. The two sexes seem to be equally affected. The expectoration of hair occurred in 7 of the 35 cases. The cysts are most often seen in the upper part of the chest, and have their origin apparently in the mediastinum. They vary in size from that of a pigeon's egg to that of a child's head. A tendency to invade surrounding organs is common, and pulmonary involvement is followed not infrequently by hemoptysis. In the absence of hair in the sputum the diagnosis is very difficult. Surgical treatment alone offers any hope of relief.

The case seen by the writers was a woman, twenty-six years of age, who had had a cough for several years. There had been on several occasions hemoptysis, and the sputum had frequently contained hairs. For six months there had been wasting, dyspnea and night sweats. X-ray examination showed the position of the tumor to be in the right chest just below the clavicle. No tubercle bacilli could be found in the sputum. Patient was discharged from the hospital unrelieved.

BY WHAT ROUTE DO TUBERCLE BACILLI FROM THE MOUTH AND THROAT REACH THE LUNGS?

According to Beitzke² three different routes have been mentioned as possible: (1) Cervical glands, truncus lymphaticus, superior vena cava, heart, lungs; (2) ¹/₂ cervical glands, supraclavicular glands, top of pleura, lung; (3) cervical glands, bronchial glands, lung.

Beitzke showed by the injection of anatomical preparations that the cervical glands were never connected with the bronchial glands, and very rarely with the supraclavicular glands. Injection fluid, moreover, never reached the top of the pleura. Beitzke thinks that although infection in animals may, possibly, be produced by way of cervical glands, truncus lymphaticus, superior vena cava, heart, lung (route 1), in children, at any rate, the primary lesion is in the lung, and that the bacilli are inhaled. Whatever tuberculosis is found in the cervical glands is coincident, and bears no direct relation to the pulmonary condition.

To assist in the early diagnosis of pulmonary tuberculosis in those cases in which sputum is lacking Blume³ recommends the following procedure: An ordinary glass slide is placed in a small, specially made holder. This slide is held

¹ *Lancet*, 1905, Nov. 4.

² *Berl. Klin. Woch.*, July 3, 1905.

³ *Ibid.*, Aug. 21, 1905.

in front of the mouth, and the patient coughs upon it every morning for eight or ten days. In this way quite a collection of small sputum droplets are obtained, which, when dried and stained, not infrequently show tubercle bacilli.

ABORTIVE PNEUMONIA.

According to the literature which Bechtold¹ gives in full, abortive pneumonia with crisis within twenty-four hours is not so very rare. In Leube's clinic from 1887 to 1905 there were 1,057 cases of pneumonia among which were 10 which lasted only twenty-four hours. All these cases were characterized by sudden onset with chill and high fever, followed in twenty-four hours by profuse sweating and fall of temperature. Local pain was present in 8 cases, and pointed almost surely to the seat of the lesion. Physical signs were but slightly marked. In two cases there was no dullness whatever, and the diagnosis was made on the severe general disturbance and the auscultatory signs, rough breathing and crepitant râles. Twice there was bronchial breathing and twice pleural friction was heard. Bronchophony was present in four cases. A characteristic rusty sputum was seen once. Once the sputum contained bright blood. There was no report as to the bacteriology of the cases.

THE X-RAY DIAGNOSIS OF THORACIC ANEURISMS.

Baetjer² reports four years' experience at the Johns Hopkins Hospital with x-rays in the diagnosis of thoracic aneurism. This diagnosis was made 104 times. In 70% to 75% of the cases the diagnosis had already been made by other methods. The x-rays practically always confirmed the medical findings. In 20% to 25% of the cases the diagnosis was doubtful but in many instances, the subsequent course of the disease proved the x-ray diagnosis to be correct. In 5% of the cases the aneurism was found by accident, there being no physical signs. Eighteen per cent of the cases came to autopsy, and the x-ray findings were always confirmed. In view of such results the value of the x-rays in diagnosis of thoracic disease is apparent.

Meyer Westfeld³ reports a case in which extensive adhesive pericarditis with failing cardiac compensation was relieved by operation. The patient a young man of twenty-four had had two attacks of pneumonia with pleurisy. The chief physical signs were systolic retraction of the thorax at the cardiac apex and diastolic collapse of the veins of the neck. There was no paradoxical pulse. Probable involvement of the heart muscle was indicated by signs of passive congestion in lungs, liver, kidneys, peritoneum and lower extremities.

At the operation the fourth and fifth ribs were resected from sternum to the anterior axillary line, and the heart was freed from its adhesions. Recovery was slow but constant. Thirteen weeks after the operation the signs of passive

congestion had disappeared, and the patient felt able to take up light work.

Weinberger⁴ and Pesci⁵ give very favorable reports of digalen as a cardiac stimulant. The advantages of digalen over old digitalis preparations are: (1) Absence of irritating properties; drug can be given as well subcutaneously as by mouth; (2) more exact dosage is possible, the composition of the drug being always the same; (3) inasmuch as intravenous injections are very well borne, maximum stimulation can be obtained in emergency cases in a very short space of time. Drug should be given in daily doses of 2-3 cc, until there is distinct slowing of the pulse. It is then to be omitted. There has been no evidence of cumulative action.

OPIMUM IN HEART DISEASE.

Musser⁶ urges the more common use of opium in myocarditis, weak heart and dilated heart. The use of opium seems to be especially indicated in, (a) sudden failure of the myocardium; (b) to prevent or lessen the effect of angina pectoris; (c) in weak heart after exhausting disease, and after prolonged mental and physical pain without valvular or muscular lesion; (d) in failing compensation when patient is very nervous or irritable; (e) parenchymatous nephritis and in arteriosclerosis; (f) tachycardia of Graves' disease.

HEMORRHAGIC PLEURISY AS A COMPLICATION OF EXOPHTHALMIC GOITRE.

Breton⁷ states that hemorrhage is a not very uncommon event in exophthalmic goitre. It has been seen in nose, retina, brain, lung, stomach, intestine and uterus. Less common is hemorrhage into the pleura, and of this Breton reports a case. The patient was a woman of sixty-nine, who had had trouble with her thyroid from the age of puberty. An increase in size of the tumor had been noted after each of two pregnancies, and especially after the menopause. She was under observation for over a year. She was tapped several times on account of increasing dyspnea, and in practically all instances bloody fluid was removed. Temporary improvement followed. Thorough examination never revealed any pulmonary disease. She was treated at first with large doses of opium with temporary relief. Electrotherapy helped the tachycardia. The use of "hemato-ethyroidine" was followed by decrease in size of the tumor, and decrease in the pulse rate. The drug was then omitted but the symptoms returned and there were furthermore renewed signs of a pleural effusion. Resumption of the "hemato-ethyroidine" was followed by a retrogression of the symptoms, and the treatment has been continued up to the present time.

TOXIC AGENT IN TUBERCULOPNEUMONIA.

Bren⁸ contributes an interesting study of the action of the toxic agent in lobular pneumonia, and its bearing upon therapeutics. A full article

¹ Münch. Med. Woch., Oct. 31, 1905.

² Johns Hopkins Hosp. Bull., Jan. 1906.

³ Münch. Med. Woch., Oct. 3, 1905.

⁴ Cent. für Innere Med., July 8, 1905.

⁵ Ibid., Oct. 6, 1905.

⁶ Amer. Jour. Med. Sciences, Jan. 1906.

⁷ Can. Med. Assoc. Jour., Oct. 4, 1905.

⁸ Johns Hopkins Hosp. Bull., p. 213, 1905.

of the toxic agent causes stimulation of the central nervous system and increased activity of respiratory and circulatory mechanisms. Intense action of the toxic agent produces overstimulation, over-work, enfeeblement and exhaustion. There is also direct destructive action of the toxin upon the tissues themselves which causes them to break down prematurely. Death is due to (1) exhaustion of the respiratory center and (2) circulatory insufficiency with resulting accumulation of the toxic agent and cardiac exhaustion. As to therapeutics, in the absence of a specific antitoxin we must try to eliminate the toxin or to mitigate its harmful influences. Internal hydrotherapy is of great value. A large urinary out-put should be induced by the large ingestion of water, and also by the use of digitalis. Fever is to be met with external hydrotherapy. Pain may be relieved by the ice bag and analgesics; restlessness by external hydrotherapy, analgesics and narcotics. Respiratory and circulatory conditions are of especial importance. For the respiration heroin seems to be the ideal drug as it decreases and at the same time deepens the respiration. In rare instances, however, it may produce untoward cardiac symptoms. In such cases morphia may be substituted. Inhalation of oxygen is probably useless and may be harmful by increasing inflammatory process. As to circulatory sedatives, these are in general contra-indicated, except that nitrates may be of value during early periods of increased cardiac work. Alcohol is indicated in alcoholic cases. Circulatory stimulants are contra-indicated except members of the digitalis series. Strychnia, caffeine and cocaine are not to be used because they stimulate the respiratory center which is already overexcited.

Shively¹² gives some interesting statistics as to the incidence of tuberculosis in large families. The effect of repeated pregnancies in quick succession upon the health of the mother and her susceptibility to tuberculosis cannot but be bad, especially when combined with hard work, poor food and other debilitating conditions of life. The effect upon the children has not been so clear, though Brehmer claimed that the later children of large families were more apt to become tuberculous. Shively, however, as the result of observations upon 1,175 cases of tuberculosis in families containing from five to thirteen children concludes that there is no constant or uniform numerical progression from the first to the last child as there should be if a greater susceptibility to consumption really existed in the later children. On the contrary the distribution seems to be quite remarkable in its evenness.

Conklin¹³ reports a case of resuscitation by manipulation of the heart of a man apparently dead from shock. The heart had ceased to beat for at least two minutes and manipulation for forty or sixty seconds was necessary before heart action returned.

Leube¹⁴ calls attention to the presence of a venous pulse in cases of anemia and its value in the differential diagnosis of cardiac conditions. The venous pulsation, as seen in the jugular, is sometimes quite marked. Sometimes it is simply suggestive. In the latter case it can be increased by pressure upon the liver. It is to be explained by a relative insufficiency of the tricuspid valve caused by the anemia and is the analogue of the mitral insufficiency seen under similar conditions. The symptoms in both cases disappear with improved blood conditions. In some cases of anemia the venous pulse may be present and no other evidence of tricuspid insufficiency. In such cases we must assume that valvular leakage exists, but that it is not sufficiently pronounced to produce other symptoms. In determining whether a mitral insufficiency, in the presence of anemia, depends upon endocardial changes or upon an impoverished blood condition, the venous pulse may give considerable help, for in simple anemia the insufficiency of the mitral and tricuspid is coincident and not accompanied by other signs of impaired circulation. Where the leakage of the mitral rests upon endocardial changes, the involvement of the tricuspid follows only after a considerable interval of time and there is also evidence of other serious circulatory disturbance.

Reports of Societies.

THE SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

EIGHTEENTH ANNUAL MEETING, HELD IN LOUISVILLE, KY., DEC. 12, 13 AND 14, 1905.

THE Association met at the Seelbach Hotel, under the presidency of DR. LEWIS C. BOSHER, of Richmond, Va.

After the usual preliminaries, the reading of papers was begun.

SURGICAL REPAIR OF INJURED NERVES.

DR. J. SHELTON HORSLEY, of Richmond, Va., reviewed the work of recent investigators on the histological regeneration of nerves. He alluded to the views of Beth and others, who claim that regeneration of a peripheral nerve can take place without central connection. He classified the surgical methods of repair as follows: (1) Simple nerve suture, including all cases where the ends of the nerve are brought into direct contact and sutured, even when nerve stretching or resection of the long bone may be necessary. (2) Flap operations, which were usually unsatisfactory. (3) Nerve bridging. By this term was meant those cases in which a foreign substance was used to bridge over the defect between the ends of a divided nerve. This included not only transplantation of nerve tissue from lower animals, but also *suture à distance*. (4) Nerve implantation or anastomosis. Under this head were included those cases in which the ends of an injured nerve were implanted into a healthy nerve.

He reported a case falling under the last classification. The patient had suffered an injury as a result of which the upper part of the median nerve had been destroyed for two and a half inches and the musculo-

¹² New York Med. Jour., July 8, 1905.

¹³ *Ibid.*, Sept. 2, 1905.

¹⁴ Zeit. für Klin. Med., vol. lvii, p. 199.

spiral injured in the lower part of the arm with paralysis of all muscles in the hand and forearm except those supplied by the ulnar. Three months after this the median was implanted laterally into the ulnar. Fourteen months later both flexion and extension had returned to a marked degree. At that time the musculo-spiral was cut across and implanted laterally into the median. Ten months after the second operation sensation and motion of the hand and forearm had almost completely returned. In discussing several points connected with the case, Dr. Horsley concluded that the extensors must have been supplied through the anterior interosseous of the median, because flexion and extension improved simultaneously, and because extension was not interfered with at the second operation, when the musculo-spiral was completely divided.

DISCUSSION.

DR. CHARLES H. MAYO, of Rochester, Minn., said one question that interested him more especially was the difference in the ability of repair of a sensory nerve and a motor nerve, also combined sensory and motor nerves. For instance, about the head, where we had the purely motor and sensory nerves it was almost impossible to keep a sensory nerve from uniting itself. It would get out and grow for inches and repair itself; but a sensory nerve having peripheral impulses towards the center seemed to lack regeneration like a motor nerve in which the impulse came from the center out. He had taken out the infra-orbital, plugged the opening with silver, and had a case as many as seven years without return of sensation in that area, yet within a few months, after operating again, and removing the silver plug, the sensory nerve which had been lying dormant for this length of time, would get out, hunt up a partner, so to speak, and go to work. Take the motor nerve of the arm, where there were acute sensory and motor nerves, we would get more rapid regeneration because of the peripheral impulses, and as the sensory nerve of the arm was so much in excess over that of the leg, we would get earlier repair in the surgery of nerves of the arm than we would in the leg.

DR. HORSLEY, in closing the discussion, called attention to the point that his patient was of a low grade of intelligence, whose nervous system was not well developed, and the same law applied here as would apply to other similar cases, namely, the lower the type of organism, the more rapid and more active the repair.

FOREIGN BODIES IN THE ESOPHAGUS.

DR. STUART McGUIRE, of Richmond, Va., said that the diagnosis of foreign body in the esophagus was based on the history of the case, the external palpation of the neck, the passage of an esophageal bougie, and finally by the use of the x-ray. The character and location of the foreign body being determined, the practical question was how to remove it. If it was round or smooth, efforts should be made to extract it with forceps and probangs, or to make the patient eject it by swallowing masses of partially masticated food and then vomiting. If it be small, it might seem wise to endeavor to push it into the stomach. None of these expedients should be tried when the foreign body was pointed, sharp or angular. Under modern surgical technique, an open operation was the safest procedure. There were two means of approach, one by an external esophagotomy, the other by a gastrotomy, and the selection of the method would depend on the location of the impaction. If it was opposite the cricoid cartilage, an esophagotomy should be done,

if it was below the level of the supraclavicular notch, then gastrotomy should be performed.

As an illustration of the operation of esophagotomy and gastrotomy, he reported two cases. In one, the patient, aged ten, while playing with a glass stopper, put it in her mouth and swallowed it. It lodged in the esophagus opposite the cricoid cartilage and produced complete obstruction. The foreign body was removed by an external esophagotomy.

The second case, a baby, aged seven months, while being dressed, seized an open safety-pin and put it in its mouth. The mother, in her efforts to remove it, pushed it first into the fauces and then into the esophagus. The pin was removed in the case by a gastrotomy.

DISCUSSION.

DR. J. WESLEY LONG, of Greensboro, N. C., narrated the case of a forty-six-day-old infant who had swallowed an open safety-pin; the pin lodged in the esophagus opposite the two cricoid cartilages. A radiograph, however, showed that the point of the pin was below the arch of the aorta. It produced constriction of the esophagus where the left bronchus crosses it, and the pin was removed by an external esophagotomy without any shock. He thought there were some cases in which this operation was preferable to gastrotomy.

DR. W. S. GOLDSMITH, of Atlanta, Ga., mentioned the case of a patient who had swallowed the concave part of a dental plate, which lodged in the esophagus and was retained there for a period of four months. At the end of this time, patient was very much emaciated and weak. After locating the foreign body, efforts were made to extract it with forceps, but this could not be done. It then occurred to him to try Bull's method of attaching a series of sponges to a long silk ligature and using an esophageal bougie, passing it out through the mouth and leaving in position the series of sponges. After attaching the bougie, it was a simple matter by a few sweeping movements backward and forward to push the foreign body into the stomach and extract it through the gastrotomy opening. The foreign body was of such consistency that the x-ray was of no aid.

DR. H. A. ROYSTER, of Raleigh, N. C., reported the case of a child, two years of age, who, two weeks previously to his seeing the case, had swallowed the wheel of a tin toy wagon. The child was able to swallow liquids, but not solids. During this time it subsisted on milk and liquid food. He used a medium-sized shotted semi-elastic bougie for the purpose of an examination; this passed into the esophagus, met with some resistance, after which he was enabled to pass it further without obstruction apparently. After applying a mouth gag, he was enabled to extract the foreign body with an esophageal forceps. The foreign body lay transversely across the esophagus.

DR. J. SHERMAN HENSLY, of Richmond, Va., said if a foreign body could not be removed by ordinary means, no time should be lost in resorting to early operation. He reported the case of a child who had swallowed a camel from a grab bag. The child put it into its mouth, it was situated a little lower than the level of the larynx. He tried to extract it by several different methods, but was unsuccessful. He saw the child on the fourth day after it had swallowed the foreign body, did an esophagotomy, and removed it with comparative ease. The esophagus was injured and gangrenous. Septic symptoms developed, and the child died on the fourth day following the removal of the foreign body. He thought the child might have been saved by an earlier operation.

DR. CHARLES M. ROSSER, of Dallas, Tex., reported two cases of foreign bodies in the esophagus. In one, the foreign body, an ordinary pin, was located by the x-ray, but could not be removed by ordinary means. Two-thirds of the pin was buried, but with the aid of the fluoroscope the pin was caught by its head, and with forceps extracted.

In the other case, a child, a nickel was located within two or three inches of the cardiac end of the esophagus. Gastrostomy was performed, and the foreign body extracted. The child lived about six or eight hours, then died, apparently without shock.

DR. RUFUS B. HALL, of Cincinnati, Ohio, reported the case of a child of a physician, five months old, who swallowed a safety-pin an inch and a half long. It remained in the esophagus for a time, but at the end of twenty-four or thirty-six hours the symptoms caused by its presence disappeared. The child was able to take the breast and thrived well. An x-ray picture was taken which disclosed an open safety-pin in the pyloric end of the stomach. Parents declined an operation for its removal until unfavorable symptoms developed. Several x-ray pictures were taken; but the child did not develop any unfavorable symptoms referable to the presence of the safety-pin. When the child was twenty-six months old, it passed the pin by the natural route. The child is now seven years of age.

DR. W. D. HAGGARD, of Nashville, Tenn., related the case of a child, eighteen months old, who swallowed a pin the head of which was as large as a cherry-seed. The child developed cough, and the presumption was that the pin had lodged in a bronchus. An x-ray picture threw very little light in regard to the presence of the foreign body. The pin appeared to be in a bronchus, with its head down and to the left. The child had little or no pulmonary symptoms, to justify him in doing an operation. At the end of ten days another x-ray picture was taken, but the symptoms were so slight that operation was deferred. Four days later another radiograph was taken, which failed to locate the pin, and shortly after this the child passed the pin by the natural route.

DR. MCGUIRE, in closing the discussion, said no hard and fast rules could be laid down as to whether esophagotomy or gastrostomy should be done in a given case. Of the two operations he preferred to do gastrostomy. It seemed easier and the after-treatment was simple. If it was equally applicable, it was the method to be adopted.

GALLSTONES IN THE CYSTIC DUCT.

DR. L. H. DUNNING, of Indianapolis, Ind., presented a method which he had employed in one case which greatly facilitated the pressing backward into the gall bladder of a stone impacted in the cystic duct. In this case the gall-stone was lodged in the cystic duct in front of a small stricture. After making all the efforts he deemed prudent to press the stone backwards into the gall bladder without success, he then unsuccessfully attempted to dilate the stricture with the finger-tips and later with forceps. One of his assistants suggested that he thought they could better dilate with the forceps if they could see the stricture. The walls of the gall bladder were elastic. The liver had been turned upwards, so that the gall bladder was near the surface. The opening in the gall bladder through which he had been working was enlarged a little, and then the stone was steadied and held against the stricture by an assistant. The fundus of the gall bladder was pushed forward toward the strictured entrance into the cystic duct. They so far succeeded as to bring the opening in the wall of the gall bladder

directly opposite to the strictured opening. They then tried to introduce the forceps tips, but failed. Picking up a pair of probe-pointed scissors curved on the flap, the point was gently worked through the fistula and the scissors opened; this did not dilate the opening sufficiently, so the edge of the fistulous ring was snipped slightly in two or three places, when they were able to dilate the fistula, so as to permit the easy exit of the stone. The operation was completed in the usual way. A rubber tube was fastened in the gall bladder and that viscus anchored to the fascia. Before they had finished the operation a little bile had flowed into the gall bladder. Two or three ounces of bile were discharged from the tube daily; at first it was dark and thick, but gradually approached the normal color and consistency. The patient made an uneventful recovery, and had but little further pain or soreness in the gall bladder region.

He thought the procedure adopted in this case might be found of service in others. It was not applicable to cases in which the gall bladder could not be brought near the surface, or where the gall bladder was thickened by inflammatory deposits.

In the author's experience in operating upon ninety-three cases of gallstones, there were ten cases of stone in the cystic duct requiring considerable effort to dislodge them. In two of the cases early in his experience the stones were crushed and portions left behind, subsequently giving so much trouble that cholecystectomy was finally performed.

(To be continued.)

Recent Literature.

Culbreth's Materia Medica. A Manual of Materia Medica and Pharmacology for Students and Practitioners of Medicine and Pharmacy. Comprising all Organic and Inorganic Drugs which are and have been official in the United States Pharmacopoeia, together with important Allied Species and Useful Synthetics. By DAVID M. R. CULBRETH, Ph.G., M.D., Professor of Botany, Materia Medica and Pharmacology in the University of Maryland, Departments of Medicine, Pharmacy and Dentistry. Fourth edition. Revised to accord with the new United States Pharmacopoeia, eighth decennial revision. Octavo, 976 pages, 487 illustrations. Philadelphia and New York: Lea Brothers & Co. 1906.

This excellent book contains much valuable information, concerning the description and composition of drugs. Many drawings are included. It is comprehensive, well arranged and well indexed. In places the style loses in the author's effort to condense. It is, however, unhesitatingly recommended both for study and reference.

The physiological action of drugs is described. Organic drugs from the vegetable and animal kingdom, inorganic carbon compounds, non-pharmacopoeial organic carbon compounds and the use of the microscope in materia medica are all carefully covered. The appendix includes a discussion of the treatment and antidotes of poisons, prescription writing and table of weights, measures, doses, etc.

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THE EPIDEMIC POSSIBILITIES OF UNRECOGNIZED OR UNREPORTED INFECTIOUS DISEASES.

THE importance of recognizing communicable diseases early in their course, to the end that measures for the protection of the community from the spread of infection may become operative without delay, is a matter in general so well understood that comment upon it in these columns might seem unnecessary. The facts set forth in a letter recently sent by the secretary of the Massachusetts State Board of Health to the health officials of the town of Medway, make it apparent, however, that it is possible for conditions to exist in some of our communities, even in so hygienically civilized a state as Massachusetts, which not only are highly prejudicial to the public health, but give evidence of a lack of medical skill, or a willingness to suppress the truth, of a deplorable and alarming.

It appears that during the last ten days of February, thirteen of the fifty odd persons of a factory boarding house in Medway were taken sick. All but one of these were young women who were lodgers at the house as well as boarders. The physician called to attend the first patient observed symptoms which he regarded as suggestive of typhoid fever. Upon being consulted, he was informed that his services were not longer desired, and that medical attendance for the lodgers would be rendered by the physician designated by the proprietor of the boarding house and by none other. At the end of a week six persons were sick. They were cared for in the boarding house by a female physician who diagnosed them as cases of grippe, her diagnosis

being confirmed by a practitioner of the same school, whom she called in from a neighboring town. The sixth, a young man, lived in a private house and came under the care of a physician who early regarded the case as probably one of typhoid fever, and who later so reported it.

On March 5, sixteen days after the first person was taken sick at the boarding house, information was received by the State Board of Health which led to an immediate investigation. Inquiry revealed the conditions already described together with the fact that seven more individuals had been taken sick, making in all thirteen, of whom only one, the young man above mentioned, was regarded as suffering from typhoid fever. It was learned that of the twelve young women two had been allowed to return to their homes in Maine, and two to go to relatives in Swampscott, that three others had been sent to hospitals in Milford; that one was in a private house in Medway, and that four remained at the boarding house. All of these twelve patients were regarded by the attending physician as cases of grippe; no recourse had been had to the serum test for typhoid fever, and no prophylactic measures were in operation. Of the two patients removed to the private hospital in Milford (conducted by the physician called in consultation), one was taken sick on Feb. 19, the other on Feb. 27. They were removed to the hospital, the one on March 3, the other on March 5. When seen by the representative of the State Board of Health on March 7, both were so sick that the nature of the disease was clearly apparent, and one of them died nine hours later. Autopsy in this case showed the characteristic lesions of typhoid fever. Blood from these patients, and from the four others in the boarding house, gave a most pronounced Widal reaction.

From the physician attending them, it was learned that the two persons who went to Swampscott were suffering from typhoid fever, and that in each case the blood gave a positive Widal reaction. It has been learned that three additional cases of the disease have occurred since March 5, making a total of sixteen, that six patients have been removed to the hospital from the boarding house, and that the latter is still

At the time of writing no information had as to the probable cause of the outbreak, and as to the probable cause of the outbreak, it was certainly not typhoid fever. Still, the case was so obviously suggestive of typhoid fever, that the contagion, the importance of which has been taken into consideration, is not our intention to

possible channels through which infection may have entered this boarding house, but rather to call attention to the serious consequences possible where the presence of typhoid fever remains unrecognized or concealed in a community, especially under circumstances highly favorable to its spread. All of the patients in this instance were operatives in a factory employing more than one hundred persons. Several of them persisted at their work long after they should have been in bed, alike for their own good and for the safety of others. The spread of typhoid fever is at times most insidious, although knowledge of the occurrence of the bacillus typhosus in the urine, it may be for many weeks after recovery from the disease, throws some light upon the origin of epidemics.

The Commonwealth provides, through the diagnosis laboratory of the State Board of Health, a most valuable aid to the physician in the early diagnosis of typhoid fever. There is no excuse for the practitioner who fails to make use of the Widal test, gratuitously performed, in any case where the clinical symptoms do not justify a diagnosis without it.

In the present instance there would seem to be very little by way of extenuating circumstance. We believe that it is inconsistent with the present standard of general medical intelligence to charge to the account of "grippe" a series of cases presenting as did these many of the symptoms of an acute infectious disease, without duly considering typhoid fever as a possibility, and without having recourse to so valuable an aid in diagnosis as the serum test. The physician is by no means infallible, but where the public health is in any degree involved, the public may rightly demand the exercise of intelligence and of the utmost carefulness.

More serious, however, than any exhibition of ignorance or carelessness, is the suggestion in this affair of an attempt to disguise the facts, and to withhold from the health officials and from the community at large the knowledge of the existence within it of a communicable disease. Such a practice as this, conceived, it may be, in comparative ignorance as to its portent, is a most serious menace to the public health, and is capable of working great harm to any community.

The publicity given to this incident should suffice to secure to the people of Medway immunity from any repetition of it, and ought to serve as a warning to all others never to trifle with a matter so intimately connected with the public safety as the control of infectious diseases.

THE REPORT OF THE STATE BOARD OF HEALTH OF MASSACHUSETTS.

THE thirty-sixth annual report of the State Board of Health covers the work of the Board during the year 1904, and is a most interesting record of admirable work, to which we have been so long accustomed.

The death-rate for the year, 15.76, was the lowest for more than half a century, with a striking decrease in all the infectious diseases except tuberculosis and cerebrospinal meningitis.

Weekly mortality returns voluntarily sent to the Board for a population estimated at 2,135,416, or 68% of the population of the state, and the statistics required by statute for towns and cities of 5,000 inhabitants, or 2,638,585 people, comprising 85% of the estimated total population of the state, furnish an exceptional opportunity to study the prevalence of the prominent diseases from week to week and their fatality at different seasons and in various places.

One hundred cases of smallpox, 4,100 of scarlet fever, 6,772 of diphtheria and croup, 2,605 of typhoid fever and 12,511 of measles were reported during the year, under the law requiring notification of diseases dangerous to the public health each month, in order that suitable measures may be taken at once in case of undue prevalence of any one or them.

The examinations of sewer outlets during the year were directed chiefly to outlets into Boston harbor and to flats and tidal waters from which shellfish are taken as food. By request of the city of New Bedford, the Board investigated certain flats and tidal waters near that city and found sewage bacteria in quahaugs and shellfish near certain sewer outlets, with the result of such precautions being taken as to prevent the sale of such dangerous food.

Of 125 applications for advice upon matters relating to water supply, sewerage and sewage disposal, requiring the careful consideration of the Board, 75 related to water supply, 12 to sources of ice supply and 30 to sewerage, drainage and sewage disposal. More than one hundred pages of the report are devoted to the Board's advice in answer to these inquiries and, in connection with the same subject in previous reports, constitute an exhaustive consideration of the questions involved for reference and permanent use.

One hundred and seventy-two of the 353 cities and towns in the state, representing about 92% of the population, are now provided with public water supplies and show a correspondingly

diminished death-rate to less than 2 per 10,000 from typhoid fever as the most striking index of improved conditions of the public health.

For three cities and six towns, in furtherance of their custom, the Board established, during the year, rules and regulations for preventing the pollution and securing the sanitary protection of ponds and streams used as water supplies. The experiments with salts of copper to destroy disagreeable odors and taste of drinking water are not yet conclusive.

From an examination of a few selected industries, cutlery grinding, stone cutting and polishing, cigar making, boot and shoe making, rag sorting, the rubber industry and the lead industry, the Board recommends a codification of all laws relating to industrial pursuits and to sanitation of factories and workshops, the establishment of standards of ventilation, the enactment of some measure against spitting upon floors of workshops, factories and other confined spaces, and of more explicit phraseology than is now in existing laws.

The investigations with regard to the examination of public water supplies, water supply statistics and records of rainfall and flow of streams, purification of sewage and water and filtration of water comprise more than one-half of the bulk of the report, in continuation of similar inquiries which have been made for many years, and altogether place the Board as one of the foremost authorities in these vital measures of public health.

Under the food and drug inspection statute, 1,997 samples of milk, 2,799 of other food and 855 of drugs were examined during the year. Of the total, 8,651, those found adulterated or not up to the requirements of the law, were 26.6%. There were 62 prosecutions with 57 convictions.

Beginning with the year 1895, the Board has issued 241,562 bottles of diphtheria antitoxin with an enormous saving of life and with a reduction in the death-rate from that disease to 2.3 in the year 1904. From April 1 to Sept. 30, 1904, there were 494 specimens from 94 cities and towns examined for the bacilli of tuberculosis, of which 212 were found positive. 61 towns sent 204 samples of blood to be examined for typhoid fever, of which 158 were negative and 24 blood films showed the malaria parasite in 40 cases.

Under the familiar heading of Health of Towns one notices chiefly the enormously increased activity of local boards of health. Seventeen have laboratories for investigating sources and causes of disease.

Of Dr. Abbott, who died on Oct. 22, 1901, the Board well says that he was the able, devoted and untiring officer of a service to which he gave, with enthusiasm, the best years of his life. As a young man his strength was devoted to the perilous duties of the volunteer surgeon in both army and navy during our Civil War, and he spent his last twenty-two years in an equally determined struggle for the safety of the lives of his fellow-men, while secretary and executive officer of the Board.

As his successor, the Board has been fortunate in their appointment of Dr. Charles Harrington, an able and accomplished sanitarian of established reputation and character.

LOWELL INSTITUTE LECTURES ON CERTAIN PREVALENT NERVOUS DERANGEMENTS.

The first lectures of the last Lowell Institute course of this year were begun this week before a large audience by Dr. James J. Putnam, professor of neurology in the Harvard Medical School. As indicated in the synopsis of the course, Dr. Putnam will aim in these lectures to present in a semi-popular way certain of the modern ideas regarding prevalent nervous disorders and their significance, both to the individual and to the community at large. The topics of the various lectures are summarized as follows: The Nervous Health of the Community and the Influences Tending to Maintain and to Impair it; Influences Tending to Impair the Nervous Health of the Individual, especially Emotion and Fatigue; The Subconscious Life in its Medical Aspects; Correlations between the Mental and the Physical—Function and Structure, The Power of Adaptation Considered in its Medical Relations; Survey of our Means of Preserving Nervous Health—Mental Influences, Ideas and Habits.

Under these comprehensive headings, Dr. Putnam proposes to discuss matters which are evidently of most vital importance, and about which there is much superficial theorizing and speculation. Judging from the first lecture held Monday evening, and from Dr. Putnam's established reputation as a man of broad and general mind, it is not to be questioned that those who follow the lectures from beginning to end will take away with them a thoughtful interpretation of the best modern thought on many of the most complex questions of our time.

MEDICAL NOTES.

TROPICAL MEDICINE IN BERLIN. — A department of tropical diseases and hygiene, according to the *British Medical Journal*, has been established in connection with the Berlin Institute of Infectious Diseases. Dr. Claus Schilling has been appointed head of the new department. He took his doctor's degree at Munich, in 1895, and was afterwards assistant in the University Pathological Institute under Professor Bollinger. Later Dr. Schilling accepted a post in the Bacteriological Laboratory of the Imperial Health Bureau at Berlin. In 1900 he went out as Government Medical Officer to Togo. For a year past he has been working in the Berlin Institute of Infectious Diseases. Dr. Schilling is the author of many contributions to bacteriological and pathological literature.

ARROW POISONS. — Various forms of arrow poisons have been studied previously and now, according to the *Lancet*, Mr. Louis W. La Chard has been investigating certain very deadly poisons used by the native of Northern Nigeria. Two poisons were discovered, one vegetable and the other animal. He was able to isolate a variety of ingredients of the vegetable poison and found that it probably contained a highly toxic soluble alkaloid. Three specimens of the animal poisons were examined and shown to be made up of purulent and decaying matter, the effect of which is to produce ptomaine poisoning. The arrow heads are smeared with both poisons, but it is Mr. La Chard's opinion that either would cause death.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, March 14, 1906, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 43, scarlatina 39, typhoid fever 3, measles 205, tuberculosis 76, smallpox 0.

The death-rate of the reported deaths for the week ending March 14, 1906, was 21.73.

BOSTON MORTALITY STATISTICS. — The total number of deaths reported to the Board of Health for the week ending Saturday, March 10, 1906, was 250, against 214 the corresponding week of last year, showing an increase of 36 deaths and making the death-rate for the week 21.90. Of this number 124 were males and 126 were females; 242 were white and 8 colored; 167 were born in the United States, 80 in foreign countries and 3 unknown; 58 were of American parentage, 162 of foreign parentage and 30 unknown. The number of cases and deaths from infectious dis-

eases reported this week is as follows: Diphtheria, 53 cases and 6 deaths; scarlatina, 28 cases and 2 deaths; typhoid fever, 3 cases and 4 deaths; measles, 185 cases and 3 deaths; tuberculosis, 78 cases and 31 deaths; smallpox, no cases and no deaths. The deaths from pneumonia were 45, whooping cough 1, heart disease 30, bronchitis 7 and marasmus 3. There were 7 deaths from violent causes. The number of children who died under one year was 43; the number under five years, 74. The number of persons who died over sixty years of age was 63. The deaths in public institutions were 73.

There were 2 cases reported from cerebrospinal meningitis during the week.

HOUSE OFFICER ALUMNI ASSOCIATION, MASSACHUSETTS GENERAL HOSPITAL. — Arrangements are being made for the formation of an alumni association of the past house officers of the Massachusetts General Hospital. It is proposed to hold the first meeting at the Massachusetts General Hospital on the afternoon of March 24, when the newer parts of the hospital will be open for inspection and clinical demonstrations held for the benefit of the members. In the evening there will be a dinner at the Hotel Vendome.

A LOVING CUP TO DR. HENRY P. BOWDITCH. — At a meeting of the Bowditch Club, March 6, which followed a dinner for the members and certain invited guests, Dr. Henry P. Bowditch, for whom the club was named, was the recipient of a silver loving cup as a gift from the members, presented by the president, Dr. Allen Cleghorn. Dr. Bowditch responded in an appreciative speech. Later in the evening Dr. R. H. Fitz gave personal reminiscences of his and others' work in the development of our knowledge of appendicitis.

BOSTON LYING-IN HOSPITAL. — The work of the Boston Lying-in Hospital, which is recognized as one of the leading maternity hospitals in this country, shows that during the last year the number of patients treated in the hospital itself was 671, and that 669 children were born and cared for. The average length of stay in the hospital of the mothers was slightly over sixteen days, and there were but eleven deaths. The out-patient department treated 1,915 patients, with a total number of visits of 28,530. The valuable factor of the out-patient department work is that mothers are attended by trained nurses, graduates of the hospital training school. The report of the visiting physician makes the welcome statement that fewer patients were taken care of this year than last, due to the fact

that those in comfortable circumstances applying to the hospital were transferred to the care of the younger members of the staff who were willing to undertake their care for a moderate fee. It is hoped by this means to expose the hospital less to the reproach of pauperizing the community in the type of case received in its wards. The training school has been highly successful, and applications are numerous for entrance to the school. Sixty applicants were rejected during the year. The hospital needs improvements for the completest carrying out of its work and an appeal is made to the charitably disposed to meet these continual demands.

NEW YORK.

BEQUESTS.—Among the charitable bequests made in the will of the late Mrs. Frederica Talman are \$5,000 to the Faith Home for Incurables and \$1,000 to the Brooklyn Home for Consumptives.

GIFTS TO BROOKLYN CHARITIES.—Mr. Peter Wyckoff, who recently distributed \$50,000 among five charitable institutions in Brooklyn, has now made an additional gift of \$10,000 to the German Hospital in Williamsburgh.

DEDICATION OF ST. FRANCIS HOSPITAL.—Archbishop Farley dedicated the new St. Francis Hospital, in the Bronx, on March 1. This institution, which was organized in 1865, and was formerly located in East 5th Street, Manhattan, now occupies the entire block bounded by 142d and 143d streets and St. Ann's and Brook avenues, and has a capacity of four hundred beds.

A HOSPITAL AT MOUNT KISCO.—A meeting was held on March 5, under the auspices of the District Nursing Association, for the purpose of organizing a hospital to be located in the northern part of Westchester county, where the residents regard such an institution necessary. It is probable that the selection of Mount Kisco will be made for the new hospital, and a piece of property there, containing two small houses suitable for the work, has been offered the Association.

RESOLUTIONS AGAINST TRANSFER OF DYING PATIENTS.—Impressed with the need of action in consequence of a case recently reported to him in which a woman in moribund condition was hurried from the New York Hospital to Bellevue and died in the ambulance on the way, Coroner Harburger, chairman of the Board of Coroners, called a special meeting of the board for March 10. At this meeting vigorous resolutions protesting against the practice of transferring dying patients from one hospital to another were adopted. The

concluding resolution is to the effect that if the warning given is disregarded, the Board of Coroners will take stringent measures to bring the offenders to justice.

SUBWAY CONSUMPTION.—The day after Dr. Soper's report was made public, Dr. Philip O'Harlon, one of the coroner's physicians, announced the discovery of an affection which he designates "subway consumption," due to the inhalation of these steel particles. This was in consequence of the pulmonary conditions found at the autopsies of two subway track walkers who died recently, which were made by him in the presence of Dr. Soper and Dr. John H. Larkin, instructor in pathology in the medical department of Columbia University.

A SEASIDE HOSPITAL FOR TUBERCULOUS CHILDREN.—John D. Rockefeller has offered \$125,000 to the New York Association for Improving the Condition of the Poor for the erection of a permanent seaside hospital for children suffering from surgical tuberculosis, on condition, first, that the Association shall raise a like amount by June 30 next; and, second, that the maintenance of the hospital, by endowment or otherwise, shall be assured. Towards fulfilling the first condition nearly \$50,000 has already been subscribed, and it is believed that the balance will be secured without difficulty, as the success of the Association's temporary hospital for this class of patients at Sea Breeze, Coney Island, has demonstrated the need of a large permanent institution of the kind.

TOO MUCH DIPHTHERIA; TOO LITTLE ANTIDOTOXIN.—In view of the recent increase in diphtheria in the city, Health Commissioner Darlington has issued an appeal to the general public, as well as the medical profession, for the more prompt and general use of antitoxin. At present the average percentage of death in cases of this disease is 14, and he expresses his conviction that with a proper resort to the antitoxin this could be reduced to 2%. During the week ending March 3 the number of cases reported from it was 175, as against 374 in the preceding week, and the number of deaths from the disease was 61. This appears to be a "measles year." Ever since the beginning of 1906, more than 1,000 cases have been reported each week, and during the week ending March 3 the number amounted to 1,003. It is gratifying to note, however, that notwithstanding the increased number of cases, the mortality from measles was less in this week than in that ending Feb. 3.

STATE COMMISSION IN LUNACY. — It is announced that Dr. M. V. Mabon, president of the State Commission in Lunacy, has tendered his resignation of that position, and is to be appointed superintendent of the Manhattan State Hospital for the Insane on Ward's Island, New York, in the place of the late Dr. Emmet C. Dent.

ANNUAL REPORT, COMMISSION IN LUNACY. — The seventieth annual report of the State Commission in Lunacy has just been made public. While, as previously announced, the number of new cases of insanity developing was smaller during last year than in the year preceding, and but slightly in excess of that in 1903, the number of insane in the various institutions of the state was 27,300 on the first day of June, 1905, a ratio of one person to 299 of the general population, as against 17,275 in 1902, a ratio of 1 to 377 of the general population.

MONTHLY MORTALITY, NEW YORK. — The weekly reports of the Health Department show that during the month of February the mortality in the city represented an annual death-rate of 18.81, as against 18.72 in January and 19.77 in February, 1905. The corrected death-rate, excluding non-residents and infants under one week old, was 17.76. Among the diseases in which there was an augmented mortality were the following: The weekly average of deaths from measles increased from 20.5 in January to 45.75 in February; the weekly average from pulmonary tuberculosis, from 164.75 to 171.75; from influenza, from 8.75 to 9.75, and from epidemic cerebrospinal meningitis, from 17 to 18.25. Among the diseases in which there was a decline in fatality were the following: The weekly average of deaths from acute bronchitis decreased from 50 to 39.25; from pneumonia, from 175.5 to 163.75; from bronchopneumonia, from 121.75 to 120; from cancer, from 56.5 to 55.25; from organic heart diseases, from 114.75 to 112, and from Bright's disease and nephritis, from 125.5 to 108. The mortality from cerebrospinal meningitis was 50% smaller than at the same period of 1905, and it is stated that the general death-rate for the week ending Feb. 3, namely, 18.01, is lower than that of the corresponding week in any year of which the Department has record.

AN ATHLETIC FIELD FOR COLUMBIA. — Plans have been reported for the construction of an athletic field for Columbia University, which is to cost \$1,000,000, and will be one of the largest and finest in the world. The ground on which it is purposed to build it is to be reclaimed from

the Hudson River, and it will extend four blocks, from 116th Street to 120th Street, and from the present shore line out to the limit which the United States government permits for piers in the river. On the filled-in inclosure there will be constructed three separate fields, one for the use of the University, and two on either side of this, north and south, for the Public Schools Athletic League and for a public playground. On the roof of the stands to surround the university stadium, which will have seats for 35,000 spectators, there will be located recreation grounds for the public, similar to the city's recreation piers now in use. While the consent of the municipal authorities to the project has not as yet been obtained, it is believed that, in view of the great public benefit to be derived, without any expenditure on the part of the city, there will be no difficulty in securing this. It is also stated that there is every prospect of readily raising among the friends of Columbia the large amount required for carrying out the undertaking.

A FIELD HOSPITAL FOR THE NATIONAL GUARD. — The New York National Guard is to have a field hospital, which is to be attached to headquarters and will be used in caring for the sick and wounded when the guard is in camp or when performing riot duty or engaged in other active service. The new hospital will not in any way interfere with the present regimental hospital corps. It is proposed, when the troops are in the field, that all sick and wounded men in the care of the regimental hospital who have not recovered in twenty-four hours shall be turned over to the field hospital, as is done in the regular army. The latter will be equipped with a portable laboratory, with a view to the prevention of disease by the examination of water, food, etc. The hospital staff will consist, in time of peace, of four officers and forty-six enlisted men. Dr. William S. Terriberry of the Twelfth Regiment, who served as a medical officer in the Spanish-American war, is to be in command of this new field hospital, and he will be assisted by Dr. William E. Butler of the Twenty-third Regiment, and Dr. Thomas A. Neal, late of the Seventh Regiment, who is pathologist to the New York Infant Asylum. The fourth officer, it is stated, has not yet been selected.

SANITARY CONDITIONS OF THE SUBWAY. — Dr. George A. Soper, the consulting sanitary engineer, has made an elaborate report to the Rapid Transit Commission, in which, in substance, he

shows the sanitary conditions of the subway to be on the whole good, in spite of the fact that its sanitary administration is bad. After critical and severe criticism in various particulars, he states that there were, on an average, more than twice as many bacteria found in the air of the streets as in the air of the subway, excepting after rains, when fewer were found outside than inside. The average number of bacteria which settled from the air in fifteen minutes and were developed upon the plates was: In the subway, 500; outside, 1,157; difference, 657. The average number of bacteria found in filtered air was 3,200 per cubic meter of air in the subway, and 6,500 per cubic meter of air in the streets; difference, 3,300. The number of bacteria in the air of the subway varied with the amount of travel, being most numerous when the number of trains and passengers was largest. The pneumococcus was found capable of retaining its virulence for twenty-three days in the subway, while according to Dr. Wood, who made studies of the resistance of this organism for the Commission for the Investigation of Acute Respiratory Diseases of the New York City Department of Health, the pneumococcus is killed in four hours in sunlight. In samples of subway dust examined a large percentage of minute steel particles, the result of friction, was found.

Obituary.

CHARLES A. LINDSLEY, M.D.

Is the death of Dr. Charles A. Landis, of New Haven, which has occurred within the week, the state of Connecticut loses a valuable public servant and the medical profession a man of distinction. Since 1884 Dr. Landis has been in the position of secretary of the Connecticut State Board of Health and for many years, previous to this appointment he had been a professor of the Yale Medical School. At that school he had successively occupied the positions of professor of materia medica, of therapeutics, and of professor of the principles of therapeutics, and on sanitary system. He had a special collection of resources of the materia medica, and a historical library. His other work was connected in connection with the Board of Health, and he did all the necessary work connected with the interests of public hygiene. He was a distinguished biologist and a very competent physician, the surgeon general of the state, and the author of a valuable work on the diseases of the oyster-belt of the Connecticut coast.

Miscellany.

HUMAN BLOOD PRESSURE AND PULSE AS
AFFECTED BY ALTITUDE

CHARLES FOX GILBERT, M. D., HON. W. H. HENRIKSEN, and others, have described the results of a study of the effect of a large number of blood pressure measurements at Colorado Springs and at Pike's Peak, the latter having an altitude of 6,900 feet, the former that of 14,000 feet. It was ascertained that the average blood pressure of residents of Colorado Springs who had been there for over a year or more was slightly lower than that of dwellers at the sea level, while the Colorado natives showed the increase in altitude, said to be present in plateau dwellers. Tests of twenty-two healthy residents taken from Colorado Springs to the top of Pike's Peak, in a railway car without any muscular effort, showed that at the end of three and one-half hours the blood pressure had fallen from 126 mm. to 118 mm., and the pulse rate had gone from 80 to 90 per minute. The authors found a rough ratio between pulse rate and blood pressure; the more rapid the pulse, the lower the blood pressure. It was also noted that when a pulse rate was but little affected by an altitude of 14,000 feet, the blood pressure was also more constant, that cases of mountain sickness were accompanied by a fall in blood pressure and a rapid pulse rate. The conclusion is that cases of high tension are likely to be benefited by being sent to high altitudes, while the change would probably be an undesirable one for patients in whom the blood pressure is abnormally low at sea level. *Medical Record*, March 10.

THE NEW HAVEN MEDICAL ASSOCIATION.
RESOLUTIONS OF THE COMMITTEE ON PATIENT
MEDICINES.

3. *Resolved*: That the Secretary of the New Haven Medical Association be requested to write the following firms, Kinnow Tabbet Company, Fraser Tabbet Company, George C. Fris, Horbaker's Food Company, Johnson & Johnson, Keck & Matteson, Mellin's Food Company, Schuchman & Co., Seabury & Johnson, Adair's Meat Food Company, Wm. Lee & Co., for information, and to inform them that the Association is officially, when they are so notified, members of the Protestant Association of America.

2. *Relevance*—Despite the reason that the *Journal* is devoted to the New Historic Movement, it is not devoted to all aspects of the movement. The *Journal* is devoted to the contributions of the movement to the study of the American continent and the Caribbean.

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RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, MARCH 3, 1906.

| CITIES. | Reported deaths in each. | | CITIES. | Reported deaths in each. | |
|------------------------|--------------------------|--------------------------|------------------------|--------------------------|--------------------------|
| | Deaths under five years. | Deaths under five years. | | Deaths under five years. | Deaths under five years. |
| New York | 1,648 | 523 | Quincy | 12 | 3 |
| Chicago | 363 | 158 | Waltham | 9 | 1 |
| Philadelphia | 670 | 130 | GloUCESTER | — | — |
| St. Louis | — | — | Pittsfield | — | — |
| Baltimore | 200 | 69 | Brookline | 6 | — |
| Cleveland | — | — | North Adams | 5 | — |
| Buffalo | — | — | Chicopee | 2 | — |
| Pittsburg | — | — | Northampton | 4 | — |
| Cincinnati | — | — | Melford | 3 | — |
| Milwaukee | — | — | Beverly | 3 | — |
| Washington | — | — | Hyde Park | 4 | — |
| Providence | 86 | 25 | Newburyport | 3 | — |
| Boston | 242 | 72 | Leominster | — | — |
| Worcester | 51 | 15 | Westfield | 4 | — |
| Fall River | 47 | 10 | Ware | 5 | — |
| Cambridge | 26 | 10 | Marlborough | 1 | — |
| Lowell | 49 | 23 | Westfield | — | — |
| Lynn | 23 | 3 | Peabody | — | — |
| New Bedford | 39 | 3 | Revere | 3 | — |
| Springfield | 24 | 6 | Clinton | 4 | — |
| Lawrence | 28 | 10 | Attleborough | — | — |
| Somerville | 16 | 3 | Adams | — | — |
| Holyoke | 44 | 6 | Ware | — | — |
| Brookton | 12 | 2 | Milford | — | — |
| Malden | 6 | 2 | Weymouth | — | — |
| Salem | 11 | 4 | Frammingham | — | — |
| Chelsea | 15 | 19 | Watertown | 3 | — |
| Haverhill | 12 | 1 | Plymouth | — | — |
| Newton | 3 | — | Southbridge | 3 | — |
| Fitchburg | 13 | 5 | Warefield | — | — |
| Taunton | 8 | 1 | Webster | — | — |
| Everett | 8 | 4 | | | |

CHANGES IN THE MEDICAL CORPS U. S. NAVY
FOR THE WEEK ENDING MARCH 10, 1906.

R. W. PLUMMER, passed assistant surgeon. Detached from the naval recruiting station, Kansas City, Mo., and ordered to the naval recruiting sub-station, St. Joseph's, Mo.

W. N. McDONELL, assistant surgeon. Ordered to the "Yankee."

L. H. SCHWEIN, acting assistant surgeon. Ordered to the "Celtic."

J. B. DENNIS, surgeon. Detached from the Naval Hospital, Pensacola, Fla., and ordered to the Naval Proving Grounds, Indian Head, Md.

F. L. BENTON, surgeon. Detached from the Naval Hospital, Brooklyn, N. Y., and ordered to the Naval Hospital, Pensacola, Fla.

SOCIETY NOTICES.

AMERICAN MEDICAL ASSOCIATION CHORUS.—I have been asked to augment to thirty voices a chorus of physicians (who have sung together for some years past at the annual dinner of the Massachusetts Medical Society) in order that we may furnish some music at the President's Reception during the coming meeting of the American Medical Association in June, 5-8. We have now forty-five names on our chorus list. We must have five or six reinforcements before next June. Any one knowing of any good singers in the profession (graduates or undergraduates) will please suggest names (their own or others) to

RICHARD C. CABOT, M.D.,
190 Marlboro St., Boston

NEW YORK SKIN AND CANCER HOSPITAL.—The Governors of the New York Skin and Cancer Hospital, Second Ave., cor. 10th St., announce that Dr. L. Duncan Bulkley will give four special lectures on "The Principles and Application of Local Treatment of Diseases of the Skin," on Wednesday afternoons, March 21 and 28, and April 4 and 11, and that Dr. William Seaman Bainbridge will give a clinical lecture on "Malignant and Non-Malignant Growths," on Wednesday, April 18, in the Out-Patient Hall of the hospital, at 4.15 o'clock. The lectures will be free to the medical profession.

WILLIAM C. WHITE,
Chairman of Executive Committee.

NEW ENGLAND OTOLOGICAL AND LARYNGOLOGICAL SOCIETY.—The regular meeting of this society will be held in the Out-Patient Department of the Massachusetts General Hospital, Friday evening, March 16, at 8 o'clock. Papers: Dr.

H. A. Barnes, "Should Cultures be taken before operating on the nose and throat?" Dr. H. P. Mosher, "Fatal Meningitis after removal of the Middle Turbinate." Dr. G. L. Tobey, Jr., "Fatal Meningitis after operation on the Ethmoid Labrynth." Dr. F. C. Cobb, "The connection between certain ocular and nasal conditions." Dr. G. H. Powers, Jr., "Submucous resection of the septum." Dr. G. L. Tobey, Jr., "Submucous resection of the septum." Dr. A. Coolidge, Jr., "One cause of chronic hoarseness in children."

PHILIP HAMMOND, M.D., Secretary.

APPOINTMENTS.

CARNEY HOSPITAL.

The following appointments have been made at the Carney Hospital: Dr. W. T. Counihan, pathologist, Dr. P. S. Smyth, assistant ophthalmic surgeon, and E. A. Austin, chemist.

RECENT DEATHS.

DR. ROBERT C. HUTCHINSON, surgeon of the American Liner "St. Louis," and one of the best known medical officers in the transatlantic steamship service, died suddenly of pneumonia on board the "St. Louis" on Feb. 27, when the vessel, westward bound, was in mid-ocean. During his brief illness he was attended by Dr. Reynier Van Nessel, the medical faculty of the University of Pennsylvania, a passenger on the steamer, who when summoned to Dr. Hutchinson's bedside recognized in him a classmate at the University Medical School and a fellow-interne at one of the Philadelphia hospitals.

DR. FRANK J. FREEL of Brooklyn, N. Y., died of pneumonia on March 9, at his summer home, Stony Brook, Conn. He was a graduate of the Long Island College Hospital, and forty-eight years of age.

DR. SANFORD W. ADAMS, police surgeon of Mt. Vernon, Westchester County, N. Y., died at his home in that city on March 7, at the age of twenty-nine years.

DR. GROVES BEARDSLEY of Syracuse, N. Y., a retired surgeon of the United States Navy, died on March 7, at Atlantic City, N. J.

BOOKS AND PAMPHLETS RECEIVED.

Baby Incubators. A Clinical Study of the Premature Infant, with Especial Reference to Incubator Institutions conducted for Show Purposes. By John Zahorsky, A.B., M.D. St. Louis: Courier of Medicine Co. 1905.

Physical Diagnosis, including Diseases of the Thoracic and Abdominal Organs. A Manual for Students and Physicians. By Edward LeFevre, M.D., second edition, thoroughly revised and enlarged. Illustrated. Philadelphia and New York: Lea Brothers & Co. 1905.

Organotherapy or Treatment by Means of Preparations of Various Organs. By H. Batty Shaw, M.D. (Lond.), F.R.C.P. Illustrated. Chicago: W. T. Keener & Co. 1905.

Text-book of Medical and Pharmaceutical Chemistry. By Elias H. Bartley, B.S., M.D., Ph.D. Sixth edition, thoroughly revised. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1906.

Materia Medica and Therapeutics. An introduction to the Rational Treatment of Disease. By J. Mitchell Bruce, M.A., LL.D. (Hon.), Aberd., M.D. Lond. New and enlarged edition, revised throughout, and containing the Indian and Colonial Addendum to the British Pharmacopoeia. Chicago: W. T. Keener & Co. 1905.

The Physician's Visiting List for 1906. Philadelphia: P. Blakiston's Son & Co.

Contributo Allo Studio della Vie die Nutrizione Dell' uomo Umano. Per il Prof. Cesare Marceco. Naples, 1905. Reprint.

A Further Contribution to the Study of Pruritus Ani, with Special Reference to its Local Treatment. By Lewis H. Adler, Jr., M.D. Reprint.

A Consideration of Some of the Methods for the Treatment of Cancer of the Rectum. By Lewis H. Adler, Jr., M.D. Reprint.

Internal and External Hemorrhoids. With Special Reference to their Treatment. Lewis H. Adler, Jr., M.D. Reprint.

The Treatment of Internal Hemorrhoids by the Injection Method. By Lewis H. Adler, Jr., M.D. Reprint.

A Memoir of Dr. James Jackson. With Sketches of his Father, Hon. Jonathan Jackson, and his Brothers, Robert, Henry, Charles and Patrick Tracy Jackson, and Some Account of their Ancestry. By James Jackson Putnam, M.D. Illustrated. Boston and New York: Houghton, Mifflin & Co. 1905.

Surgical Diagnosis. A Manual for Students and Practitioners. By Albert A. Berg, M.D. Illustrated. New York and Philadelphia: Lea Brothers & Co. 1905.

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tance into the left ureter showed a transparent, non-albuminous urine without sediment, but a specimen from the right ureter contained albumin in very slight amount and granular cells and leucocytes such as were found in the bladder urine; the catheter passed to the right kidney pelvis showed a slight amount of aseptic renal retention. Filling the right kidney pelvis with sterile borie solution by means of the ureter catheter exaggerated the pain she complained of in her right loin. A second examination after the patient had been in bed instead of on her feet showed no retention in the kidney pelvis.

The epithelium coming wholly from one kidney, the aseptic renal retention when the patient had been on her feet and its absence when she had been in bed, as well as the pain on distending the renal pelvis, all seemed to point pretty definitely to the movable kidney as the cause of her right lumbar pain. The right kidney was cut down upon and fixed in place. The patient was seen a month later, at which time there had been no return of her pain, but too short a time had elapsed to tell whether or not this relief would be permanent.

Beside the pain in this prolapsed kidney, which was undoubtedly due to dragging on the pedicle, it is interesting to note that we had an aseptic renal retention that had begun to cause changes in the renal pelvis. These changes were apparently a maceration and desquamation of the pelvic epithelium, — changes that would probably have made the organ particularly susceptible to infection. This aseptic renal retention does not exist in all prolapsed kidneys, but when it is present it should be considered as an extra-indication for fixing the kidney in a position that will facilitate its drainage.

CASE IV. A man, forty-three, with a septic retention of his left kidney pelvis. This man came to the Boston Dispensary in the fall of 1905 in the service of Dr. C. M. Whitney, through whose courtesy I saw him. Though he denied venereal infection, it seems possible that he may have been mistaken as to this. His trouble began eleven years ago with a slight urethral discharge, which was followed by a subacute epididymitis, according to his story. Shortly after this time he began to have backache, suprapubic pain and pain in his groins. Since about 1900 he had had a turbid urine with nocturnal frequency (four or five times). He had little pain on micturition. For two years he had had bladder irrigations without effect. When he first appeared at the clinic he showed a chronic prostatitis and vesiculitis. His urine, which was very turbid, did not, however, clear with the treatment of his prostate. Neither kidney was tender nor palpable. Cystoscopic examination showed a tolerant bladder with a slight cystitis of the base. There was a curious hood-like puckering high up on the posterior wall which may have been congenital in origin or due to some former ulceration. The right ureter was on a considerable papilla; it was normal in appearance and emitted unusually strong and frequent spurts of clear urine. The left ureter was also on a papilla; it was "slipper shaped" and a bit of muco-pus could be seen protruding from the ureteric orifice. Pushing against the posterior bladder wall with the beak of the cystoscope made the ureter gape open and assume the appearance of the "golf hole" ureter of Fenwick. A catheter passed into the left ureter very easily and, left in place for twenty minutes, gave but a few drops of turbid fluid; when passed to the kidney pelvis, the

catheter excavated 2 oz. of turbid fluid in a short time. This fluid contained a trace of albumin, .50% of urea, a little blood, some epithelium, a large amount of pus and a great number of bacteria. No tubercle bacilli could be found in cover slip preparations. A catheter specimen from the right ureter showed a transparent urine of normal color containing a slight trace of albumin, urea 2.27%. The sediment, which was very slight, showed a single cast, a little normal blood and a few epithelial cells, the blood and epithelial cells probably due to a slight injury of the ureteral membrane by the catheter. The ureteric jets on the right were at times as frequent as every five seconds and occasionally there would be twenty to thirty drops in a jet, showing a very actively secreting organ.

This man was under observation for a considerable time and repeated examinations gave practically the same results. Washing out his left kidney pelvis made his urine considerably clearer temporarily and lessened his nocturnal frequency. He should submit to kidney drainage or nephrectomy, which was advised him.

This patient, who had been supposed to be suffering from a cystitis for which he had received bladder irrigations for two years, illustrates in a striking way the extent to which a renal suppuration may occasionally go without giving symptoms that call particular attention to the kidney; also the fallacy of expecting to find a palpable or tender kidney in all renal suppurations. At no time was I able to detect any mass or tenderness in his left loin.

CASE V. A woman of thirty-nine, referred for examination in December, 1905, by Dr. H. Lincoln Chase. She had been delivered of her eighth child seven weeks before. Immediately after delivery Dr. Chase had noticed a considerable mass in her right lumbar region, which was elastic and the shape of an enlarged kidney. It was movable and could be separated from the liver above. This mass gave considerable pain for the first three weeks following labor; since then it had been painless, though it had gradually increased in size. A week before she was seen she suddenly became blind in her left eye, due, it is said, to a retinal hemorrhage. The blindness persisted at the time of examination, though it was clearing up some when this woman was last seen.

Her urine, which was very slightly turbid, contained leucocytes in small numbers and epithelial cells. Tubercle bacilli were found in it. The patient occupied the same room with her husband, who had advanced phthisis, and the presumption was that she had a tuberculosis of her right kidney. The bladder, which was perfectly tolerant, showed a little redness about the left ureter. The right ureteric orifice was small and normal looking. A No. 6 catheter could be introduced into the right ureter about one and one half inches, but could not be made to go any further. No urine could be gotten. A catheter passed into the left ureter perfectly easily, and a half ounce of urine, of about the same turbidity as the bladder specimen, was obtained, in a short time. In this urine tubercle bacilli were found. At a subsequent examination, three weeks after the first, the findings were the same.

The knowledge gained in this case was of considerable importance and raised several interesting points. On the one hand we found that the supposedly well kidney was not an entirely sound one, and while it was at that time perfectly competent it could not be depended upon

to continue so for any length of time. On the other hand the finding of tubercle bacilli in the left kidney, together with the obstruction low down in the right ureter, raised the hope that the condition in the right kidney might be purely an hydronephrosis due to an impacted calculus, and that if relieved before too long a time elapsed, the kidney might be rapable of a certain amount of work and of helping out to some extent the kidney known to be tuberculous. The patient has not as yet been willing to submit to operation.

CASE VI. An Italian woman of about thirty, who entered St. Elizabeth's Hospital in November, 1905, in the service of Dr. Kingman, to whom I am indebted for the privilege of reporting the case. She spoke but little English, and her complaint, so far as could be learned, was of backache and dysuria. She had a heavy uterus in the third degree of retroversion, with nothing else that could be made out on pelvic examination. Her urine showed the characteristics of a chronic cystitis. It was supposed that her pain and cystitis both depended on the abnormal position of her uterus, so a ventral suspension was done. Immediately after the operation the patient had a rather profuse haematuria lasting some days. This gradually cleared up, but her pain and frequency remained and her urine continued to show microscopic blood. The bladder, on examination, was found difficult to cleanse, and very intolerant to distention; it would hold no more than 3 oz. without giving great pain. The cystoscope showed that the trigone and lateral walls of the bladder were inflamed, thickened and covered with great flakes of mucus-pus. With the prism turned upward, a moderate sized stone could be plainly seen. The curious position of the stone was accounted for by the fact that the ventral suspension had pulled up the bladder in such a way as to make it an inverted cone, and that when I had introduced the cystoscope it had slid between the bladder base and the stone, raising the stone from the floor. Litholapaxy was performed by Dr. Kingman the next day. The stone was very soft and had as a nucleus what seemed to be a bit of mucous membrane. The patient went home in a few days entirely relieved of her pain and frequency and with a urine that was clearing up rapidly. Even after this calculus had been seen with the cystoscope, bi-manual examination failed to detect its presence.

CASE VII is one of cancer of the left kidney. The patient was a married woman, fifty-seven years old, seen with Dr. W. A. Brooks, through whose courtesy I report the case.

When the patient was seen in January, 1906, she had a painless haematuria that had persisted for two weeks. Four weeks before she had passed bloody urine at one micturition. There was a vague history of a little pain and of a tender spot in the left loin during the summer of 1905. The left kidney was not tender and was not definitely enlarged. There were no other localizing symptoms. The urine was so bloody that it was almost impossible to distinguish any formed elements other than blood globules. The bladder was very tolerant and easily washed clean.

Cystoscopic examination showed an extremely pale but otherwise normal bladder, with rather infrequent jets of what appeared to be pure blood coming from the left ureter. The first time she was examined, the bladder medium could not be kept clear a sufficient time to catheterize the right ureter. The urine from it, however, appeared to be clear. Five days later, the bleeding being a little less, by the use of greater distention I was able to keep the medium clear a suffi-

cient length of time to catheterize the right ureter. The right urine had a slight trace of albumin, 1.39% of urea, a few blood globules (accidental, due to trauma of the catheter), a few leucocytes, a few round, spindle and oblong cells; no casts; in other words, the urine showed a kidney of fair capacity.

The absence of any considerable pain, together with the absence of casts or of any evidence of suppuration, led me to the probable diagnosis of malignant disease, which was heightened by the negative findings of radiography. Somewhat later the bleeding increased and the patient began to have occasional attacks of colic, due to the expulsion of clots.

Owing to Dr. Brooks' departure for Europe, the patient was operated upon by Dr. Mixer Feb. 2. The left kidney, which was removed, showed on its anterior surface near the lower pole, a malignant mass as big as a plum, extending from the cortex to the pelvis. It had apparently not burst through the capsule. The right kidney has shown itself to be perfectly competent and the patient is making a good recovery.

CASE VIII shows another instance of painless haematuria due, however, to a different cause. The patient was a Chinese merchant, aged forty-three, referred to me by Dr. E. M. Greene.

His previous history was unimportant. For three months he had been passing bloody urine, the greater part of the time without pain. For a little while he had had some frequency of micturition. He had noted that there was often no bleeding at night. There was no symptom that gave any hint as to the source of this man's bleeding. Palpation was negative. His urine, which was bright red, contained a considerable number of clots, and no formed element other than normal blood cells were found. He had a moderately tolerant bladder, but the bleeding made it difficult to wash it clean.

Cystoscopic examination, made through a slightly bloody medium, showed a wavy mass with hemorrhagic patches on the right side of the bladder near the right uterine orifice. This mass was undoubtedly a papillomatous growth of some type for which operation has been advised, but not yet carried out.

In all of the above cases the cystoscopic examination added very definitely to the knowledge that had been obtained by the other methods of study. In Case III this knowledge simply corroborated and added some interesting, but perhaps unimportant, data to what was already known. In the other cases, with the exception of Case VI, in which sounding or digital examination of the bladder would doubtless have given the same result, cystoscopy gave valuable knowledge that could have been acquired in no other way with so little danger or discomfort to the patient.

In the cases of painless haematuria of renal origin, cystoscopy is of particular value, allowing one to tell definitely which kidney the bleeding is from before the other localizing symptoms—pain, tenderness and increased size, have appeared. The great value of this early localization in cases of malignant disease is self evident.

TYPHUS FEVER IN MEXICO. Dr. Bernardo Jacoby, of New Orleans, has reached Mexico City to make a study of typhus fever. There have been 130 new cases since March 1, with 42 deaths. The sanitary campaign in the poorer quarters of the city is vigorously prosecuted. *American Medicine*

CEREBRAL SEIZURES WITH SUBOCCIPITAL PAIN: MILIARY CEREBRAL AND GROSS VERTEBRAL ANEURYSMS.*

BY W. D. RUSTON, M.D., AND E. E. SOUTHARD, M.D., BOSTON.
From the Pathological Laboratory of the Boston City Hospital.

THE following case suggests the difficulty of diagnosis in cranial conditions anatomically simple. A woman of sixty-nine years presented a series of cerebral seizures without focal signs, leading to fatal issue in nineteen days. The seizures were ushered in by boring suboccipital pain. The autopsy revealed several successive voluminous hemorrhages so situated in various parts of the cerebrum that the fibres of the projection system were largely spared. The small cerebral arteries, both of the cortical and the ganglionic systems, were beset with miliary aneurysms. Both vertebral arteries opposite the junction of bulb and cord, showed gross aneurysmal dilatation.

I. Clinical History.—Widow of sixty-nine years. For a year before her last illness she showed a tendency to drowsiness in the daytime and would even fall asleep in company.

She was taken one evening, nineteen days before her death, with sudden, severe, suboccipital pain, described as boring and confined to a spot the size of a fifty-cent piece. The pain was at first attributed to neck strain, produced by gazing up at mural paintings the afternoon of the attack. The pain was followed shortly by projectile vomiting with retching. These symptoms persisted for two days. The day after the attack the pain became less severe and changed to a dull ache, constant in the original situation and varying in intensity, without, however, relation to movement or position of the head and neck. On the fourth and fifth days of the illness there were slight chills with sweating. Evening rise of temperature from 1° to 3° F.

Examined Nov. 1, 1905 (W. D. R.). Development good. Considerable adipose tissue. Mind clear. Attitude cheerful. Eyes: Movements normal; pupils react readily to light and distance. Head: No tender spots; no bruit heard; no rigidity or retraction of neck; no inequality in sides of face; no paralysis of facial muscles. Tongue: Protruded straight, dry, coated, cleaning in center. Breath foul. Throat: Negative. Pulses: Regular, 68, of good volume with increased tension. Moderate degree of radial and brachial arteriosclerosis. Heart: Right border two finger breadths to right of right edge of sternum; upper border at third rib; left border in nipple line; apex in fifth space in nipple line; action regular; sounds of good intensity; systolic blowing murmur over aortic orifice; aortic second sound accentuated. Lungs: Negative, except for a few moist râles in both bases behind. Abdomen: Negative. Spleen: Not felt. Extremities: Normal. Reflexes: Superficial reflexes slow; knee jerks slow and equal; Kernig's sign absent; Babinski's sign absent. Leucocytes, 17,000.

The evening of Nov. 2 (eighth day of illness) came another attack of boring pain, localized as before, lasting eight or ten minutes. The mind wandered during the attack. There was steady improvement. The temperature remained slightly elevated. The pulse ranged from 60 to 68. The mind was clear. The attitude cheerful. The dull aching pain continued in the back of the head.

The morning of Nov. 13, after passing a comfort-

able night, the patient complained of a sudden cold feeling in the forehead. Consciousness became clouded. Coma and Cheyne-Stokes breathing set in with death in about two hours.

Clinical Summary.—Woman of sixty-nine, with moderate arteriosclerosis and an enlarged heart. Attacks of severe, boring pain, localized in an area the size of a fifty-cent piece, in the suboccipital region (first and eighth days). Slight chills (fourth and fifth days). Temperature slightly elevated with morning remissions. Leucocytes, 17,000. Death in coma two hours after a sudden cold feeling in the forehead (nineteenth day).

II. Autopsy Findings (E. E. S.)—Well developed woman of middle height. Nutrition good. No edema. Pupils equal, not dilated.

Trunk: Subcutaneous fat of abdomen 5 cm. deep; cavities normal; mesentery very fatty; mesenteric lymph nodes not palpable.

Heart: Considerable epicardial fat; heart much enlarged; valves normal, except for raised yellow areas of sclerosis in mitral leaflet; muscle of both ventricles unusually firm and without opacities; right ventricle 1 cm., left ventricle, 2.5 cm. thick; chambers contain freshly clotted and liquid blood; coronary arteries show nodular sclerosis. Lungs: Normal; post-mortem congestion of bases beginning; slight superficial fibrous thickenings at each apex; bronchial lymph nodes not remarkable. Spleen: 18 cm. long; capsule smooth and slightly thicker than usual; substance firm, not pulpy; Malpighian bodies made out; trabeculae slightly increased; splenic artery shows marked stiffening. Liver: Chestnut brown, firm; lobulation made out with difficulty. Gall bladder: Small, buried in smooth old adhesions; contains no stones. Pancreas: Normal. Gastro-intestinal tract: Normal on inspection and palpation. Kidneys: Strip readily, leaving a roughened surface; numerous small cysts over anterior surfaces of both kidneys; pea-sized aberrant adrenal, 2 cm. from hilum, midway between poles imbedded in anterior surface of right kidney; substance shows opacities suggesting fat. Pelves normal. Adrenals normal. Genitalia: Atrophic.

Head: Hair fairly thick and streaked with gray. Scalp: Strips readily. Calvarium: Thick (in places 1 cm.) and dense. Dura: Tightly adherent to calvarium over all, but inseparably adherent to occipital bone. Sinuses: Normal. Arachnoid villi: Slightly developed. Pia mater: Everywhere reddened by hemorrhage or dissolved blood pigment. The frank areas of hemorrhage involve the sulci of the anterior and mesial surfaces of the cortex cerebri in the area of distribution of the anterior cerebral arteries. The flanks and posterior pole of the brain show reddening, and congestion of superficial sulcal veins, but no fine injection. Over the sulcal veins of the vertex are slender streaks of fibrous thickening. Vessels: At base show diffuse and nodular sclerosis. Both vertebral arteries show fusiform aneurysmal dilatations, 0.75 cm. in diameter. The circle of Willis is apparently pervious. The primary branches of the middle cerebral arteries show nodular sclerosis in patches 0.5 to 1 cm. long.

Substance.—Convulsions flattened. Anterior pole of left hemisphere contains a core of clotted blood and tissue detritus occupying the centrum semiovale under the first and second frontal gyri. The clot is fresh and can be readily turned out from its bed above the forceps minor. The upper fibers of the forceps minor and anterior quarter of the tapetum have been de-

* Read Feb. 15, 1905, at a meeting of the Boston Society of Psychiatry and Neurology.

stroyed by the hemorrhage and show a moist, ragged, grayish surface. The hemorrhage approaches the surface in the gyrus rectus and about the olfactory lobes; thence the blood has oozed into the orbital and polar sulci.

A similar hemorrhage fills the white matter of the right anterior pole above the forceps minor, but has broken down the gray matter at the pole. The clots on the right side cannot be turned out so readily as those on the left. Small vessels with tightly adherent small masses of mixed gray and red clot are demonstrable in the bed of the hemorrhagic area. Fresh oozing into the cortical sulci has occurred on the right side as on the left. The ventricles contain no blood and no increase of fluid. Ependyma normal. Posterior parts of lateral choroid plexuses cystic. Basal ganglia, inter-brain, isthmus, cerebellum normal.

Miliary surrounded by effused blood.

Blood serum cultures from hemorrhage into right frontal lobe and from right basal ganglion remained sterile.

The pia mater and vessels were macerated out in running water by Mr. J. B. Ayer, and both the cortical and the ganglionic systems of arteries proved to show in their smaller branches numerous miliary aneurysms. These were sometimes saccular, sometimes fusiform in shape.

Anatomical Summary. General arteriosclerosis (aortic, coronary, cerebral, splenic, renal). Fusiform aneurysms of both vertebral arteries. Miliary aneurysms of cortical and ganglionic arterial systems.

Extensive multiple cerebral hemorrhages (of varying age) in substance of anterior poles of brain and elsewhere, with oozing into superficial pia mater.

Hypertrophy of heart, endocardial sclerosis, arteriosclerotic nephritis, apical scars of lungs, chronic pericholecystitis, chronic adhesive external pachymeningitis, chronic fibrous leptomenigitis, aberrant adrenal in right kidney.

III. Macroscopic Findings.—The microscopic examination was chiefly confirmatory of the gross findings. The organs of the trunk showed relatively more arteriosclerosis than the intracranial tissues. The kidney showed numerous advanced chronic changes with extensive arteriosclerosis, numerous atrophied glomeruli and tubercles. The lungs showed no signs of acute inflammation. The spleen showed numerous hemorrhages into the pulp and a heavier framework than usual, but failed to show acute alterations.

Numerous sections were made from the cerebrum, medulla and cord. The cerebral hemorrhages proved to be distinguishable into fresh hemorrhages, hemorrhages with numerous phagocytes containing undecomposed blood globules, and hemorrhages containing pigment phagocytes. Of the fresh hemorrhages, many were small dissecting hemorrhages about the smallest vessels; but very few of these vessels showed demonstrable ectasia or alteration in the elastica. The older areas exhibited numerous phagocytic cells ingesting blood globules, sometimes in scores. The most numerous phagocytes occur in the sulci in the neighborhood of the larger vessels. The pigment-phagocytes are generally distributed and have often lost their spherical shape. There are strikingly few signs of cellular exudation anywhere in the meninges, although an occasional large subdural vein will show a minute collection of cells of the lymphocyte series at a single focus in the adventitia. Signs of reaction on the part of the

nerve tissue are few. There is an occasional strip of the outer cortical layer, which shows a number of swollen neuroglia cells; but these are enmeshed among rather dense fibrils, and there is evidence of a general but focally varying superficial fibrillar gliosis, probably long antedating the hemorrhages and still condensing. The pyramidal nerve cells show considerable over-pigmentation.

Similarly in the region of the vertebral aneurysms the diffuse gliotic alteration of the superficial zone and in the neighborhood of the posterior roots is part and parcel of a more general process, exhibited equally in the medulla beyond the zone of immediate aneurysmal pressure. Nevertheless, we cannot exclude this gliosis from influencing in some degree the regionary pain. The vessels of the cord and medulla themselves show little alteration. There was no convincing evidence of alteration in the nerve bundles in the walls of the vertebral aneurysms. Slender collections of cells of the lymphocyte series lie in the connective tissues opposite the middle of the walls of the aneurysms, where breaks in the elastica and thinning out with occasional fenestration of the muscular layer occur.

IV. Remarks.—Aneurysms of the vertebral arteries, like those of the other cerebral arteries, are rarely made out in life and are usually discovered by medical examiners in cases of sudden death. v. Hofmann, 1894, mentions ten cases of aneurysm of vertebral artery with fatal rupture, over against twenty cases of Sylvian, thirteen cases of carotid, and ten cases of basilar aneurysm in the same series.¹ Curiously enough, the youngest victims of basilar aneurysm in v. Hofmann's series showed left vertebral aneurysm (a girl of ten dying suddenly in convulsions, and a boy of fourteen dying suddenly). From time to time, however, cases of vertebral aneurysm without rupture and with definite symptoms have been reported. As examples of these and for comparison with our own case, we have abstracted in particular the irritative case of F. Schultze, 1875, the slowly destructive case of Ladame and Monakow, 1900, and the case with fatal rupture of Rindfleisch, 1905.

F. Schultze, 1875, reported a case of aneurysm the size of a cherry in the left vertebral artery about one-half inch from the junction with the basilar artery, so placed as to compress the left seventh and eighth nerve roots.² The subject was fifty-six years old and labored of phthisis, showing no effects of the aneurysm save a pronounced *trismus*. The tie had lasted about a year, and consisted in brief rapidly recurring clonic contractions of the left side of the face, starting up or augmenting with speech or mastication. The intervals without it varied. The frontalis, ear muscles and palate were not involved. Pain was absent. There were no points of pressure or which to evoke the contractions.

Ladame and Monakow, 1900, reported a case of aneurysm of the left vertebral artery in a man of sixty-eight with a history of syphilis, who

¹ v. Hofmann, *Ueber Aneurysmen des Rückenmarkes*, Leipzig, 1894, S. 123. ² F. Schultze, *Ueber ein Aneurysm der linken Halsarterie*, *Archiv für Klinische Medicin*, 1875, 18, 1.

³ F. Schultze, *Ueber ein Aneurysm der linken Halsarterie*, *Archiv für Klinische Medicin*, 1875, 18, 1.

tion at thirty.³ The symptoms began about two years before death with vertigo and attacks of angina pectoris. After a particularly violent apoplectiform attack, a cerebellar gait developed, with dysarthria, some dyspnea, cerebellar ataxia, and occasional pains in the left arm. After six months of such symptoms, the patient had a violent seizure with vertigo and vomiting, but without loss of consciousness. Thenceforward the patient always fell to the left, would no longer walk, stand or sit up, and showed loss of pain and temperature sense on the right side of the body, left abducens palsy, slight left ptosis, and narrowed left pupil. Swallowing became difficult, stupor and coma followed, with death two years after onset of earliest symptoms, forty days after the last seizure. The autopsy showed an aneurysm the size of a pigeon's egg of the left vertebral artery near its junction with the basilar artery. There was corresponding atrophy of the pons, cerebellum, olive, pyramid, and left acoustic nerve, with slight atrophy of the left fifth, sixth, ninth and tenth nerves.

Rindfleisch, 1905, reports a case of aneurysm of the right vertebral artery, with fatal rupture, in a woman of fifty-one.⁴ For ten years she had had attacks of asthma and edema of the legs. For three years she had had eructations and headaches. Three days before entrance to the hospital she had been taken with sudden eructations and pains in the back of the head. On the day of admission she had two attacks of stupor with facial cyanosis, transient Cheyne-Stokes breathing, and râles in the lungs. The first attack began with a feeling of terror and screams. In both attacks the corneal and patellar reflexes were lost. The pupils were narrow and reacted to light.

On admission were noted subfebrile temperature, slight edema of the legs, moderate facial cyanosis, diffuse râles in the lungs, weak skin reflexes and weak normal plantar reflex, absent abdominal, patellar and Achilles reflexes and hemorrhages in the fundi. Coma set in shortly, with slowed pulse, increased cyanosis and deep, noisy breathing. The patient improved with artificial respiration, but remained drowsy. Lumbar puncture yielded fluid containing considerable blood, which failed to clot. Death followed on the third day after admission to the hospital in coma, with cyanosis and cessation of breathing while the heart remained beating.

The autopsy showed all the fosse at the base of the brain filled with blood. The clots overlay the medulla oblongata, pons and chiasma. The blood was derived from the rupture of a bean-sized aneurysm situated on the mesial side of the right vertebral artery about 0.5 cm. before the junction of the two vertebral arteries.

The earlier literature of vertebral aneurysms is given by Lebert, 1866.⁵ No case like the present

appears to have been recorded, although Gray's "Anatomy," under the heading of "Surgical Anatomy of the Vertebral Arteries," refers to a case of Drs. Ramskill and Bright, in which regnary pain was due to disease of this artery.

Our own case may be classified as irritative. It is probable that the striking attacks of suboccipital pain were brought on by a combination of factors, through pressure of the vertebral aneurysms, aided by heightened intracranial pressure attending the cerebral hemorrhages. The chronic alterations of the cord and posterior root areas were no more marked than the chronic alterations above and below the region of the vertebral aneurysms; yet it is possible that the spinal gliosis found may be related in some way with the attacks. Attention may also be called to the dense pachymeningitis of the posterior cranial fossa. A closer study of non-destructive lesions would be desirable in such cases.

Pain in the back of the neck (*regio nuchæ* of His) is a symptom of some interest. Over and above a number of obvious causes, such as local inflammation of the skin, the muscles and the supportive tissues, cervical caries and osteomyelitis, pachymeningitis, leptomenigitis, neoplasms and various agents of local compression of peripheral nerves of the upper cervical segments, there are a number of obscure conditions of nuchal pain and particularly of pain in the middle of this region (*fovea nuchæ* of His). Special names are often reserved for the fixed or relatively permanent neuralgia of this region, as cervico-occipital neuralgia, occipitodynia. Occipitodynia in a certain context of symptoms is accepted as a sign of neurasthenia. Occipitodynia figures prominently in the well-known diagrams of referred pain in visceral disturbance, often under the caption "spinal irritation."

The search for the particular cause of a given pain is not always as minute as it might be. Pains are, perhaps, too readily classed as functional. The orthopedists occasionally insist on the possible relation of neuralgia to the pressure of dilated or varicose veins upon the regnary nerves. The present case brings out the possibility that arterial disease may effect the same result in one of the favorite sites for functional pain.

The puzzling features of this case of cerebral seizures with coma, ushered in by suboccipital pain, appear to be reasonably accounted for by the post-mortem findings: numerous successive hemorrhages into the silent areas of a cerebrum showing numerous millary aneurysms, and gross aneurysms of both vertebral arteries opposite the junction of bulb and cord.

GUNSHOT WOUNDS OF THE HEAD AND SPINE.*

BY WALTER R. WEISER, M.D., SPRINGFIELD, MASS.,
Surgeon to Mercy Hospital.

J. S., age fifty-three. A robust male, of good family and personal history, was seen Aug. 10, 1904, about fifteen minutes after having received two bullet wounds

* Read before the Eastern Hampden Medical Association, January, 1906.

³ Ladame et Monakov: Aneurysme de l'artère vertébrale gauche. Nouvelle Iconographie de la Salpêtrière, Tom. xiii, 1900.

⁴ Rindfleisch: Zur Kenntnis der Aneurysmen der basalen Hirnarterien und der bei den intrameningealen Apoplexien auftretenden Veränderungen der Cerebro-spinalis. Lichtheim's Festschrift. Deutsches Archiv f. klin. Medizin, Bd. 86, Heft 1-3, 1905.

⁵ Lebert: Berliner klin. Wochenschr., 1866.

of the head. One ball entered the face at the upper surface of the zygoma, on the left side, passing into the mouth through the tonsil, penetrating the wall of the pharynx and lodging in one of the upper cervical vertebrae. The second bullet entered below the zygoma, passed directly through the nasopharynx, and lodged in the masseter muscle of the opposite side. The entire pharynx was much lacerated and the hemorrhage very profuse. The wounds of entrance were small and clean cut and surrounded by powder marks. The greatest amount of bleeding came from a hole, representing the missing tonsil, and undoubtedly from

in his chair at his desk, while his assailant was standing over him and fired diagonally downward with the first shot, and this bullet was beyond doubt the one that penetrated the vertebra. In passing over the malar bone the bullet probably flattened, as is usual where they come into contact with bone, so that, as it plowed out the tonsil, there was great laceration of the soft parts; so also as it again entered the posterior wall of the pharynx there was great injury done before the force was spent upon the vertebra.

UNSHOOT. With Skin. X-Ray.



Tracing No. 1. From skiagraphs.

The route of these bullets is interesting, showing deflection with much laceration of tissue. The wound of entrance of a bullet is always clean cut while that of exit is larger and more lacerated. The victim in this case was sitting

above the right ear, passing through the brain, penetrating the orbit, and completely severing the optic nerve (skiagraph No. 4). Notwithstanding the serious damage inflicted by these bullets, she had practically no elevation of temperature and a pulse fluctuating between 80 and 100.

No attempt was made to remove either bullet until eight weeks after the injury, when the eye began to soften and was removed, together with the bullet and a small piece of the wall of the orbit.

She was delivered at term of a healthy child and, perfectly well, the spine never having troubled her in any way.

CASE V.—Mrs. L. E., aged sixty-four, mother of a victim of the same man as case IV, was admitted to hospital at the same time with bullet wound of skull

¹ Skiagraphs by Dr. H. W. Van Allen.

tion at thirty.³ The symptoms began about two years before death with vertigo and attacks of angina pectoris. After a particularly violent apoplectic attack, a cerebellar gait developed, with dysarthria, some dyspnea, cerebellar ataxia, and occasional pains in the left arm. After six months of such symptoms, the patient had a violent seizure with vertigo and vomiting, but without loss of consciousness. Thenceforward the patient always fell to the left, would no longer walk, stand or sit up, and showed loss of pain and temperature senses on the right side of the

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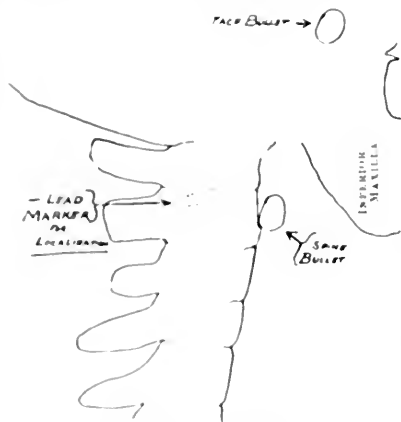
of the head. One ball entered the face at the upper surface of the zygoma, on the left side, passing into the mouth through the tonsil, penetrating the wall of the pharynx and lodging in one of the upper cervical vertebrae. The second bullet entered below the zygoma, passed directly through the nasopharynx, and lodged in the masseter muscle of the opposite side. The entire pharynx was much lacerated and the hemorrhage very profuse. The wounds of entrance were small and clean cut and surrounded by powder marks. The greatest amount of bleeding came from a hole, representing the missing tonsil, and undoubtedly from the tonsillar artery. This was controlled by packing. The wound in the posterior pharyngeal wall also bled profusely and this was controlled in a like manner.

When first seen the patient was very thoroughly exsanguinated and in profound shock, but after hemorrhage was checked and hypodermoclysis practiced, he rallied, and the following morning, aside from the inconvenience of the pharyngeal packing, was quite comfortable. After thirty-six hours the packing was removed and there was no recurrence of hemorrhage.

During the first three days following the injury the patient was very comfortable, with a steady decline in the temperature to 99° and pulse to 94. About this time the temperature and pulse gradually elevated, he complained of difficulty in swallowing and was inclined, soon, to keep the head well back. This condition increased until the morning of the ninth day, when he died.

The original plate shows a fracture of the vertebra where the bullet lies (Skiagraph¹ No. 1), and meningitis was produced, no doubt, by infection through the mouth wound.

The second bullet caused a large spot of ecchymosis on the side of the face wherein it lodged and was apparently very near the surface, but was not removed. (Skiagraph No. 4.)



Tracing No. 1. From skiagraph.

The route of these bullets is interesting, showing deflection with much laceration of tissue. The wound of entrance of a bullet is always clean cut while that of exit is larger and more lacerated. The victim in this case was sitting

in his chair at his desk, while his assailant was standing over him and fired diagonally downward with the first shot, and this bullet was beyond doubt the one that penetrated the vertebra. In passing over the malar bone the bullet probably flattened, as is usual where they come into contact with bone, so that, as it plowed out the tonsil, there was great laceration of the soft parts; so also as it again entered the posterior wall of the pharynx there was great injury done before the force was spent upon the vertebra.

The x-ray demonstrated this bullet as lying close to and a little anterior to the vertebra making its removal impractical. During the last day before death, bulbar symptoms developed rapidly, making swallowing almost impossible. There had been a progressive increase of regurgitation through the nares in swallowing for three or four days. Death followed about four hours of coma.

CASE II. B. J., age fifty-five, was a second victim of the same tragedy who came under my care at the same time, and is here mentioned for that reason. The bullet in this case struck the skull a glancing blow, making a scalp wound an inch long, and flattened the tip of the bullet, glancing off to the floor. The victim made a rapid recovery and presented no further symptoms.

CASE III. C. C., age seventy-three, Jan. 2, 1901, while in a fit of despondency, shot himself. One bullet struck the chest wall and was deflected, causing a wound which did not penetrate the chest. The second ball entered the skull just above and posterior to the upper part of the ear and lodged in the cerebellum. I saw him with Dr. W. J. Leonard half an hour after the accident and found him unconscious. On the third day we were able to arouse him and he would answer questions incoherently, always lapsing back to a semi-stupor. He complained bitterly of vertigo, which condition persisted for several weeks. Aside from this and a slight elevation of pulse and temperature, temperature never but once reaching 100°, he showed no symptoms caused by the bullet shown by the skiagraph, Nos. 2 and 3. He is today perfectly well and shows no results of his injuries aside from the scars.

CASE IV. Mrs. J. L., age nineteen, married, and three months pregnant, came into my service at the Mercy Hospital Feb. 11, 1905, one hour after having been twice shot by her husband, one bullet entering the tip of the nose, and, passing directly through the pharynx, entered the posterior wall of the pharynx fracturing one of the transverse processes of the cervical vertebra. The second bullet entered the skull, above the right ear, passing through the brain, penetrating the orbit, and completely severing the optic nerve (Skiagraph No. 4). Notwithstanding the serious damage inflicted by these bullets, she had practically no elevation of temperature and a pulse fluctuating between 80 and 100.

No attempt was made to remove either bullet until eight weeks after the injury, when the eye began to soften and was removed, together with the bullet and a small piece of the wall of the orbit.

She was delivered at term of a healthy child and, perfectly well, the spine never having been affected in any way.

CASE V. Mrs. L. E., aged sixty-two, was the third victim of the same manner as Case IV, was admitted to hospital at the same time with bullet wounds to the

¹ Skiagraphs by Dr. H. W. Van Allen.

The bullet entered through the left parietal bone, was chipped and the three pieces are seen by the skiagraph No. 5 to be imbedded in the brain substance. A second skiagraph which I am unable to produce, because, unfortunately, it has been destroyed, shows that the fragments of the bullet all remained on the left side, or side of entrance, of the brain.

On admission, this patient was in very pronounced shock and was bleeding considerably from the external wound. She had a complete paralysis of the right leg and arm and could not speak. She understood all that was said, but aphasia was complete. She soon fell into a semi-stupor and remained so for ten days, after which she became more active mentally and made an effort to speak, but without success. During the fifth week she said "Yes" and used this word for every answer, realizing that this word was not the one which she intended using. She knew her wants and expressed them by signs, using her left hand. After a few days she was able to add "No" to her vocabulary, and after a few weeks more, a few more simple words; but she had great difficulty in expressing herself, frequently using a word of opposite meaning. This depressed her greatly and after making several unsuccessful attempts to use the proper word, she would burst into tears and grow despondent. During eight weeks there was no control of the bowel or bladder. Involuntary discharges occurred, much to her annoyance. She remained in the hospital ten weeks and since going home has continued to improve in speech, but is learning over again each word that she has been able to use. While vastly improved and perfectly well physically, her vocabulary is still limited. It seems probable that the speech center in this patient was practically destroyed and that she is using the opposite side in her efforts to regain her speech.

Now a brief résumé of the important facts relating to these cases. In Case No. 1, the bullets were located, but it seemed unwise to attempt their removal because of the peculiar position of the important one. The fact that the mouth wound was continuous with the

well and illustrates, with Cases No. 4 and 5, the fact that a bullet wound in the brain substance may cause no serious trouble after the result of the first laceration is over. In Case No. 4, the severe damage inflicted in a pregnant woman without causing further trouble was phenomenal. The bullet still lies close to the spine but gives no trouble so that its removal has not been considered.

In Case No. 5, I believe that the symptoms are not caused by the presence of the bullet fragments, but by the damage to brain substance



Tracing No. 3. From skiagraphs.

inflicted at the time of injury. Removal has not been considered for that reason, and also for the reason that the fragments are widely separated in the brain substance and their removal would be difficult, and in all probability productive of no good.

The wisdom of non-interference in bullet wounds of the brain, where no urgent symptoms are present, is shown, I think, in Cases 3, 4 and 5. The laceration of brain tissue caused by operation and searching for the bullet is usually greater by far than is the damage caused by the bullet, and while I should remove a bullet if located near the surface and in sight I think it wise to practice non-interference in the usual case of gunshot wound of the brain. If symptoms develop which are alarming and the skiagraph can locate the bullet with mathematical accuracy, I should then deem operation a wise procedure. Surely, in Cases 3, 4 and 5, we could not possibly have procured better results by operation than by the treatment followed.



Tracing No. 2. From skiagraphs.

opening through the vertebra and that the bone damage was in the body of the vertebra, in this peculiar location, made us unwilling to interfere. In Case No. 3, although the bullet is shown by the skiagraph Nos. 2 and 3, to be lying in the cerebellum and at first caused pronounced symptoms, the patient is now perfectly

AUTOMOBILES FOR MEDICAL MEN. — From correspondence recently received we gather that it would be useful to draw up a statement of the requirements which an automobile ought to fulfill for the use of medical men, in the country more especially. We shall be very much obliged to correspondents who will send us their views and experiences. — *British Medical Journal*,

The bullet entered through the left parietal bone, chipped and the third No. 5 to be imbedded in the skull. The old skiagraph which unfortunately, it has fragments of the bullet on the side of entrance.

On admission, the patient was in a state of shock and was bleeding from the wound. She had a right arm and could not move it, but that was said, but she fell into a semi-stupor after which she began an effort to speak. In the fifth week she said "I cannot answer, realizing that she intended using. She then by signs, using her hands, she was able to add "a few weeks more, a great difficulty using a word of order, her greatly and after attempts to use the word tears and grow deaf there was no control of voluntary discharges of urine. She remained in the hospital home has continued to improve over again each week. While vastly improved her vocabulary is still in the speech center in the brain destroyed and that she is making efforts to regain her

Now a brief résumé relating to these two bullets were located. They attempt their removal. The position of the bullet in the mouth wound



Tracing

opening through the bone damage was in this peculiar location. In Case 1 is shown by the skiagraph lying in the cerebellum.

pronounced symptoms, the patient is now perfectly sane and experiences. — *British Medical Journal*,

Clinical Department.

CEREBRAL EMBOLISM FOLLOWING LIGATION OF THE EXTERNAL CAROTID ARTERY.

BY CHARLES L. ACUDDER, M.D., BOSTON.
Surgeon to the Massachusetts General Hospital

SARCOMA OF THE SUPERIOR MAXILLA. LIGATION OF THE EXTERNAL CAROTID. RESECTION OF THE SUPERIOR MAXILLA. DEATH FROM CEREBRAL EMBOLISM.

S. R. D., a woman, fifty years old, married. Hospital No. 143635. Autopsy No. 1111. Massachusetts General Hospital Records.

The patient had been well. The characteristic was established when she was forty years old. For some years she had had a swelling of the soft parts of the face. Five years ago an operation had been done for the removal of this tumor of the left cheek. Two years ago a swelling of the same cheek appeared and had increased in size gradually. She had slight pain in front of the left ear and at times upon the opposite side of the head. There was a left superior maxillary tumor, hard, firm and apparently extending from the subcutaneous tissues into the bone. The left atrial cavity was dark upon transillumination.

The left external carotid was ligated just below the posterior belly of the digastric before the origin of the facial artery. A complete excision of the upper jaw was then performed. The operation was done in the sitting posture. On the day following the operation a right-sided hemiplegia became evident. Six days later she died, having been partially unconscious from the day following the operation until her death.

REPORT UPON THE SECTION OF THE TUMOR.

Microscopical examination showed that the tumor was composed of a solid mass of small, round cells, having very little protoplasm, lying in a fine fibrous stroma. Throughout the section were large numbers of thin-walled blood vessels. Diagnosis: Small, round-cell sarcoma. Pathological number (57-121).

(Signed) C. C. SIMMONS, M.D.

REPORT OF THE AUTOPSY.

Anatomical Diagnosis: Operation wounds; removal of tumor of the jaw; embolism and thrombosis of the left middle cerebral artery, with infarction involving the basal ganglia, edema pae, arteriosclerosis of the aorta; hypertrophy and dilatation of the heart; cholelithiasis, chronic pelvic peritonitis.

The body of a woman fifty years of age, 160.5 cm. long, well developed, fat.

Trunk.—On the left side of the neck, extending along the posterior border of the sternocleidomastoid, there is a linear wound 9 cm. long, closed with sutures. On section, subcutaneous fat in large amount. Muscle not remarkable. The peritoneal cavity is free from fluid. The peritoneum is smooth and shining. The appendix is not remarkable, except that the distal half rests in a smooth pocket in the peritoneum. The anterior margin of the right lobe of the liver is on finger's breadth above the costal border in the right mamillary line.

Diaphragm.—Right side at third rib, left side at fourth rib. The pleural cavities are free from fluid. The right lung is free. The left lung presents a globose band of fibrous adhesions. The bronchial lymphatic glands are not remarkable. The trachea and bronchi

Autopsy No. 1111. S. R. D. Aug. 7, 1905. Hospital No. 143635.

are free. The lungs, on section, present no areas of consolidation and yield a moderate amount of reddish, frothy fluid.

The pulmonary artery is free. The pericardium is not remarkable. Heart, 398 gm. On section, the myocardium is flabby and pale brown in color. The left ventricle wall measures 11 mm.; the right ventricle wall measures 3 mm. The columnar earner are rather thin. The mitral valve circumference 11.5 cm., the aortic 7.5 cm., the tricuspid, 13.5 cm. The valves, except for their rather large circumferences, are not remarkable. The cavities are rather large. The coronary arteries are free and smooth. The aorta is fairly smooth, presenting in one or two places large, rather soft, fibrous plaques. Liver, 1,284 gm. On section, the tissue is not remarkable. The gall bladder is filled with stones. They are brownish black, firm, and nine of them measure about 1.5 cm. in greatest dimension. The others are numerous and small. The bile ducts are free. The pancreas, on section, is not remarkable. The duct of Wirsung is free. Spleen, 187 gm. The organ is not remarkable. Adrenal, normal.

Kidneys: Combined, 320 gm. Capsule strip, leaving a smooth surface. On section, the tissue is fairly firm, the markings are retained and the cortex measures 3 to 5 mm. The section surface is pale. Ureters free.

The bladder, on section, is not remarkable. The uterus and adnexa, on section, are not remarkable, except for the presence in each side of fibrous adhesions which bind the ovaries and distal portions of the tubes together. The stomach and intestines, on section, present no lesions.

Head: On the left side of the face, in the region of the left half of the superior maxilla, there is a wound which extends from the malar bone over towards the nose, then down along the nose to the region of the median line of the upper lip. The wound is closed with sutures.

On section, the pia is infiltrated with a moderate amount of pale fluid. The sinuses are free and the middle ears are normal. The brain weighs 1,225 gm. On section, the ventricles are free. The internal carotids are free. The vessels leading to the right half of the brain are not remarkable. The vessels leading to the left half of the brain, with the exception of the middle cerebral, are not remarkable. The left middle cerebral, a short distance from its origin, is distinctly occluded by a firm, gray red, thrombus-like mass. In some of the first branches of the middle cerebral the thrombus mass is apparently prolonged as a black red, somewhat softer material. In the situation of the basal ganglia on the left there is a pale, opaque, grayish red, disorganized, more or less disintegrated soft mass of brain tissue, which extends from the posterior portion of the left frontal lobe back as far as the posterior portion of the left thalamus, and including a portion of the thalamus laterally, and to the left and as above a good half of the striate body and extending downward into the temporal lobe. The condition extends into the left temporal lobe over quite an area and reaches as far as the cortical portion. In this situation the brain tissue is pale, disorganized and thin. The brain tissue elsewhere is not remarkable. There was no evidence of arteriosclerosis in the cerebral vessels.

Pathological report: Embolism of the left middle cerebral artery. No growth. Liver: No growth. Spleen: No growth.

(Signed) Charles L. Acudder, M.D.

Pathological Assistant

Massachusetts General Hospital

The facts of especial interest in this case are that whereas the preliminary ligation of the external carotid was attended with no difficulty at the time, was quickly accomplished and prevented undue hemorrhage while excising the jaw yet subsequently a clot became dislodged and was carried by the internal carotid into one of the cerebral arteries causing signs of partial unconsciousness and hemiplegia upon the opposite side, and death.

The drawings here shown illustrate well the extent and the gross appearances of the lesion. This deplorable outcome is to be considered as possible in the ligation of the external carotid, although it is comparatively rare. Matas has recorded in his own experience 3 deaths from cerebral embolism following 68 ligations of the external carotid.

Personally, I do not believe that preliminary ligation of the external carotid is always necessary in excision of the upper jaw. In this particular instance the feebleness of the individual led me to take this precaution against hemorrhage.

Medical Progress.

PROGRESS IN PATHOLOGY.

[BY JOSEPH H. PRATT, M.D., BOSTON.]

CLINICAL BACTERIOLOGY OF TYPHOID FEVER.

BRION and Kayser¹ have studied, clinically and bacteriologically, in the laboratory of Professor Forster and in the university hospital of Professor von Krehl, over two hundred cases of typhoid fever during the past two years. The abundance of material was a consequence of the strong effort Strasburg is making to stamp out the disease. No less than 96% of all the typhoid cases registered in that city were treated in the typhoid department of the medical clinic. Agglutination tests were made at a dilution of 1:50 and 1:100 with *Bacterium typhi*, and at the same time in a dilution of 1:100 with *Bacterium paratyphi A* and *Bacterium paratyphi B*. Both the microscopic and macroscopic methods of performing the tests were employed. Cultures of dead bacilli were not used, as in several cases the agglutination test was positive with young, living cultures while it failed with dead cultures of the same strain. In performing the test the tubes were kept at least three hours in the incubator at 37° C. The test was not regarded as negative unless no clumping occurred after the tubes had stood an additional half day at room temperature. The microscopic agglutination occurred often in considerably higher dilution than the macroscopic. The earliest positive Gruber-Widal reaction was obtained on the third day. This occurred in three cases. In typhoid fever or paratyphoid fever the agglutination failed in only 5% of the cases. In 10% of the cases *Bacterium paratyphi A* was agglutinated as well as the real typhoid bacillus, although cul-

tures from the blood yielded pure growths of *Bacterium typhi*. A group agglutination with *Bacterium paratyphi B* occurred in 8% of the cases. About 1% of the sera agglutinated the causative bacterium in lower dilution than it did one or more of the related organisms. The recognition of the infecting organism by the agglutination power alone can be done more often with the microscopic than the macroscopic test. Additional aids are the "delayed macroscopic agglutination" and Castellani's experiment. The power of agglutination can vary greatly from day to day. Hence, the agglutination tests should be repeated at least once a week. Their experience showed that it is extremely rare for affections other than typhoid to give the Gruber-Widal test with typhoid bacilli in dilution of 1:100. The diagnostic value of blood cultures was strongly emphasized by this study. In the first week of the disease the typhoid bacillus was cultivated in the blood from 94% of the cases. Beginning with the second week the number of successful blood cultures diminished. The cultural medium chiefly employed was sterilized ox bile. To 5 cc. of bile 2.5 cc. of blood were added. The tubes were kept twelve to twenty-four hours in the incubator, then transplantations were made to Endo's fuchsin plates. The number of positive stool cultures increased from the first to the third week of the disease. In about 25% of the cases examined during the febrile period bacilli were found in the urine. On the fifteenth day of convalescence the feces and urine were found free from typhoid bacilli in 93% of the cases. Typhoid nephritis occurred without the presence of typhoid bacilli in the urine. Three of the two hundred patients were chronic "typhoid-bacillus carriers." Occasionally when agglutination and culture tests were negative Pfeiffer's reaction or the test-tube bactericidal experiment gave the etiological diagnosis.

Among 200 clinical typhoid cases 2 (or 1%) were instances of infection with *Bacterium paratyphi A*, and 7 (or 4½%) with *Bacterium paratyphi B*. Paratyphoid exhibits the same clinical features as typhoid fever. At the autopsy of a fatal case of paratyphoid fever the classical intestinal lesions of typhoid fever were found in the lower ileum and the colon. The clinical diagnosis was typhus gravissimus. There was irregular fever with a maximum temperature of 40° C.; marked delirium; rose spots; meteorismus; stools infrequent but of pea soup consistence. Exitus occurred in the third week of the disease. On the sixth day of the disease *Bacterium paratyphi B* was isolated from the blood. On the tenth day agglutination was positive with *Bacterium paratyphi* in a dilution of 1:100, and only with this bacillus. At the section the mesenteric lymph nodes were found enlarged. In the ileum were a number of ulcers with sloughs involving Peyer's patches. In the cecum, colon ascendens, and lower part of the flex. sigmoidea were deep ulcers involving the muscular coat. The spleen was not enlarged. *Bacterium paratyphi B* was isolated from the heart's

¹ Deutsches Archiv für klinische Medizin, 1906, lxxv, p. 525.

blood, bile, spleen, mesenteric lymph glands and cerebrospinal fluid. None of the cultures made at autopsy yielded a growth of typhoid bacillus.

Terburgh² examined the canal water of Amsterdam, bacteriologically, employing the v. Drigalski-Conradi plate medium combined with the caffeine-enriching method of Hoffmann and Fischer. Sixty-one pure cultures were obtained. Eighteen formed red colonies on the plates. Sixteen of these belonged to the colon group. The remaining forty-three micro-organisms grew upon the plates as blue colonies. Two were spirilla, nine were cocci, the remainder were bacilli. Three of these colored Petruschky's litmus milk blue in twenty-four hours, and fermented glucose with the formation of gas. They formed no indol. On potato they yielded a yellow growth. The red color in litmus milk was still present after twenty days, while in typhoid and paratyphoid litmus milk cultures the blue color had returned within twenty days. The organisms of this group were not agglutinated by typhoid immune serum in a dilution of 1:10. Fourteen of the cultures that formed blue colonies in the v. Drigalski-Conradi plates belonged to the group of *Bacillus fecalis* alcaligenes. Some yielded an abundant growth in bouillon, others produced only a slight clouding. Only three formed a surface pellicle in bouillon. Similar differences in growth were observed on potato and other media. Only one of the races was agglutinated by typhoid serum and then only in a dilution of 1:5.

Uncoagulated blood has very slight bactericidal power. Lubarsch found that 1 cc. of the blood serum of a normal rabbit would destroy about 30,000 anthrax bacilli in vitro while even 600 of the micro-organisms injected intravenously brought about the death of the animal within two days. Conradi made somewhat similar observations. The extravascular blood serum of a typhoid patient had a marked bactericidal action against typhoid bacilli, although the circulating blood of the patient at the time contained about 200 typhoid bacilli per 10 cc.

Bile checks coagulation and does not interfere with the growth of typhoid bacilli. For cultivating the micro-organisms Conradi³ used ox bile to which 10% of peptone and 10% of glycerine were added. Blood was obtained from the ears of typhoid patients. Usually $\frac{1}{2}$ to 2 cc. of blood was obtained without discomfort by cutting the lobe of the ear with a lancet. After the tubes were kept sixteen hours in the incubatory, Drigalski-Conradi plates were inoculated. He isolated the typhoid bacillus twenty-two times by this method, and six times paratyphoid bacilli. He obtained negative results in about 50% of his examinations. The typhoid bacillus was found in the blood in mild cases and in convalescent patients who were free from fever. The use of blood from the ear is not advocated, if permission can be obtained to withdraw

blood by means of a syringe from the vena mediana.

Different strains of typhoid bacilli vary greatly in their agglutinating power. It was formerly thought that the more virulent the strain the less readily was it agglutinated. Eisenberg and Volk, as well as Wassermann have shown that the agglutination is a more complex phenomenon than at first appeared. Cole⁴ found that a serum which agglutinated one race of *Bacillus typhosus* in a dilution of 1:8000 failed to agglutinate another race in dilutions above 1:1000. He showed that this was due to differences in the bacilli and not in the sera by inoculating rabbits with races of *Bacillus typhosus* that had been agglutinated with difficulty. The serum agglutinated other races in higher dilution than it did the race against which it had been immunized. The experiments showed that the variations in agglutinating power were due to differences in the agglutinable substance and not to the agglutinin. The agglutinable substance as well as the agglutinin is composed of a haptophore group and a functioning group. To immune serum bacilli of one race were added. After standing an hour the tubes were centrifugalized, and then the agglutinating power of the clear fluid was tested with different strains of *B. typhosus*. It was found that the greater power of agglutination possessed by some strains of *B. typhosus* is associated with greater power of combining with agglutinin. Difficulty in agglutination is associated with a diminution in the number of receptors.

Falta and Nieggerthal⁵ have made a study of the variations in a number of races of typhoid bacilli. They show that individuals can react differently to the same species of typhoid bacilli. Individuals react differently to different races of typhoid bacilli. The agglutinating power of serum as well as the agglutinability of the typhoid bacillus are, therefore, not absolute but relative terms. The writers' interest in the subject was stimulated by a small epidemic of typhoid fever which occurred in a suburb of Basel. A number of the patients were admitted to Hiss's clinic. The first case offered considerable difficulty in diagnosis. The clinical picture was not distinct, and the serum failed to agglutinate either of the two races of typhoid bacilli in the hospital laboratory during a period of seven weeks after his admission (the first ten weeks of the disease). Later, another patient from the same village was received who exhibited all the clinical signs of severe typhoid fever. His serum also failed to agglutinate the laboratory races during the first six weeks of the disease. Paratyphoid bacilli A and B were likewise not agglutinated. The spleen was punctured and a bacillus isolated which had all the characteristics of a true typhoid bacillus. This organism was agglutinated by the blood of the two patients in as high dilution as 1:160. Agglutination tests made at the same time with the laboratory

¹Cent. für Bakt., Erste Abt., Orig., 1905, xl, p. 258.
²Deutsche medizinische Wochenschrift, 1906, p. 38.

³Zeit. für Hygiene, 1903, xlv, p. 367.

⁴Deutsches Archiv für klinische Medizin, 1906, lxxv, p. 120.

stocks were all negative. Five different races of typhoid bacilli were obtained from different parts of Germany. Two of these were agglutinated in rather high dilution. The blood from a number of cases in the same epidemic exhibited a graduated scale in the agglutinability of these typhoid races. For example, the serum from the second case in the fifth week of the disease agglutinated the organism isolated from its own blood in the dilution of 1:160; Casperi, 1:320; Königsberg, 1:80; Frankfurt, 1:40; Berlin, 1:20; Prague, 1:20. Late in the disease the blood of all the patients agglutinated all the races of typhoid bacilli. The blood of the first patient did not give a positive reaction with one of the stock typhoids until the tenth week of the disease. A positive result was then obtained in the dilution of 1:40. They found no race of typhoid bacilli which, under all circumstances, was difficult to agglutinate. The agglutinating power of a serum is the resultant of three factors: the receptor-apparatus of the immunizing or disease-producing race, of the race used for the agglutination test, and finally of the serum of the infected individual.

After the sera of some of the patients acquired the power of agglutinating the different races of typhoid bacilli a Hemmungsreihe appeared. They apply this term to the paradoxical property of a serum whereby a concentrated serum does not agglutinate, while the same serum diluted produces agglutination. This interesting phenomenon was first described by Eisenberg and Volk, and has subsequently been studied by Schiga, Schwoner, Lipstein, Lipschütz, Volk and de Waele. These authors hold that there are substances in the serum which have a greater avidity for the bacteria than the agglutinins. These substances attach themselves to the receptors of the bacteria, and hinder the anchoring of the active serum agglutinins. As these inhibiting bodies are present in smaller numbers than the agglutinins, by increasing the dilution of the serum the concentration is so much lessened that they can no longer interfere with the activity of the agglutinins. The writers hold that these bodies may be derived from Joos's thermostable agglutinins. For the cases with absolute lack of the inhibition bodies they advance the theory that in these individuals no labile agglutinins have been produced. In certain cases in man and infected animals the inhibition bodies were absent throughout the entire course of the disease. In a number of cases the inhibition bodies were completely absent in the beginning of the disease, and appeared later in its course, or they were present at the first examination and increased during the progress of the disease. In a number of cases inhibition zones suddenly developed. This was associated with the development of complications. For example, the blood of one patient on the tenth week of the disease agglutinated typhoid Basel 1:80; the following week croupous pneumonia developed, and this agglutinating power was lost in all dilutions. In a single

serum inhibition bodies may be present for one or several races of typhoid bacilli, while they are completely lacking for other races. The frequent presence of inhibition bodies in typhoid sera furnishes additional ground for making a series of agglutination tests with serum of various dilutions. Cases of typhoid fever in which the Gruber-Widal reaction develops late in the disease or not at all, are explained by the fact that the typhoid races used for the test are not readily agglutinated by that particular serum. This source of error can be removed by using a number of different races of typhoid bacilli. They recommend the employment of mixed bouillon cultures in the laboratory. In addition to the several typhoid races it would be well to inoculate the culture with the two types of paratyphoid bacilli. The difference in the relative agglutinability of the different typhoid races occurs chiefly in the sera with low agglutinating power. With increase of the agglutinating power the difference usually disappears.

Porcile⁶ studied seven strains of typhoid bacilli and found that they were agglutinated in equally high dilutions by every typhoid serum tested. Paratyphoid and colon bacilli, as well as all other related bacteria, were only agglutinated by the different typhoid sera in low dilutions. In order to distinguish different varieties of bacteria by the serum test it is necessary to employ sera of very great agglutinative power. This paper is based entirely upon experimental work. Rabbits were inoculated intravenously with dead cultures and the agglutinating power of the sera tested. The macroscopic method of performing the Gruber-Widal test was employed.

Grünberg and Rolly⁷ found there was no relation between the height of agglutination and the number of typhoid bacilli in the circulating blood. Neither the agglutinating power or the number of micro-organisms in the blood has any definite relation to the severity of the case. In 70% of the cases the typhoid serum agglutinated the paratyphoid bacilli as well as the typhoid bacillus. In 35% of forty cases agglutination of the paratyphoid bacilli occurred in higher dilution than that of the typhoid bacillus. The blood cultures in these cases yielded pure growths of *B. typhosus*. Hence they were dealing with group agglutinations "Mitagglutinationen" and not with mixed infections.

Often the serum of a typhoid patient would agglutinate one species of paratyphoid and not the other. In 55% of the cases the blood agglutinated *B. coli* and in 100% *B. enteritidis* Gärtner.

Typhoid bacilli were isolated from the blood in thirty-two (80%) of the forty cases of typhoid fever examined.

Manteufel⁸ reports from Eberth's laboratory that with eighty-five positive Gruber-Widal tests there was an agglutination of paratyphoid bacilli in fifty-eight, or 68%. He never found the paratyphoid bacillus in infections due to Eberth's

⁶ Zeit. f. Hygiene, 1905, I, p. 215.

⁷ Münch. med. Wochenschrift, 1905, p. 105.

⁸ München. med. Wochenschr., No. 28 July 11, 1905, p. 1329.

bacillus, agglutinated in higher dilution than the typhoid bacillus. This is opposed to the claim of Grünberg and Rolly but is in support of the observation of Korte and Steinberg.

(To be continued.)

Reports of Societies.

NEW ENGLAND ASSOCIATION FOR THE EDUCATION OF NURSES.*

DISCUSSION ON COMPENSATION FOR UNDERGRADUATE NURSES.

THE PRESIDENT, DR. R. C. CANNON: I have one confession to make, and that is, I have seen clearly the error of my ways in regard to this matter. In a public address made some years ago, I stated that I thought it was an anomaly that nurses paid nothing for their training. But now I see that nurses do pay for their training always—they pay in labor, they pay in service, and that argument cannot be used. One may say that nurses ought to pay more, that they ought to pay in money as well as labor, but one cannot say that the nurses in most training schools do not pay for what they get.

In discussing the question of compensation, I think it most important that we should hear from representatives of all training schools which have tried, or are now trying, to give up paying nurses. I will call upon them.

MISS DORTCHER, Massachusetts General Hospital: When the preparatory course offered by the trustees of Simmons College was offered to our school, it was decided to do away with the money allowance which had already been decreased from \$11 to \$10 a month. It was decided to do away with this allowance and to charge \$50 and to require a deposit of \$10 to cover breakage. In the first class received for a preparatory course there were 8 students. The class, by the way, was limited to 20, but we were unable to get more than 8 students. The second class, which entered in February, numbered 11, and the third, which entered in September, 14 students. That was not nearly enough to carry on the work of the hospital, and in September of this year we were obliged to go back to our former method of offering an allowance, that is, \$6 a month for the three years' training. While the better education which was offered appealed to a great many, there were also a great number of young women who were unable to enter the school for three years if no money was paid. The trustees offered four scholarships, but we had just one application.

THE PALMER, Framingham, Mass.: For the first years of our school we paid a salary of \$8 for the first year, \$10 for the second, and \$12 for the third year. Two years ago we abolished all pay for our nurses. We had some difficulty in getting nurses that we did not have when we paid them, but there is this to be said about the change, that the quality of nurses that we get is better than under the first plan. They are better prepared and come with the hope of a first-rate education. I should not say, perhaps, that they give us better service. We have also resorted to the plan of advertising for pupils, and the standard of training has been higher in the new regime, and we are very much pleased. Our present senior class still received the money that was promised them when they came into the school, but the last two classes that have come in have received no pay.

THE PRESIDENT: Does the Framingham school provide uniforms and textbooks for its pupils?

MISS STEWART, Superintendent of Nurses at the Framingham Training School: Yes.

PRESIDENT: A hospital which gives uniforms, etc., does not seem to be on a non-paying basis.

MISS KIMBALL, for the New England Hospital, Boston: When the New England Hospital's training school was established, the course was one year; then it was increased to two years and now it is three years. Two years ago we adopted the system of non-payment. We have not had so many applications, but we have enough to keep the school running. Uniforms are supplied at the hospital.

DR. WORCESTER, Waltham, Mass.: When the Waltham school was started, twenty-one years ago, we paid \$8, \$10, and \$12 a month to our student nurses. I do not know just when that allowance was finally taken away. It went through several stages of reduction, and certainly as long as ten years ago, the custom of paying anything to the probation and student nurses was done away with. Then about eight years ago the school decided no longer to furnish uniforms or textbooks, or any materials, and four years ago the school decided to charge a tuition fee. At first a small fee was charged and then a larger. Now the school charges \$250 for its first year and \$100 for its second year. Our experience with the tuition fees, being more recent, is more fresh in my mind. There are now three classes in the school, some of whom are paying their tuition fees. Of the first class, only 3 out of the 21 paid; in the second class, 11 out of 25 or 26 paid their tuition fees, and out of the present class, 20 of the 28 pay. There are working scholarships, as they are termed, so that a student nurse, by giving six months of extra service is relieved of paying any tuition, taking two vacations out of the four years' course; a paying probationer will give forty months of service and pay in all \$350 tuition fees, paying, of course, for uniforms, textbooks, and all such materials, and a nurse who comes in on a working scholarship will pay no tuition fees, but she will give forty-six months of service. We have only three classes who are paying their tuition fees, and we are not quite yet clear of the old regime.

MISS BIRNOS, for the Cambridge Training School: The school has just opened this fall, and the first class comprises only seven students, all of whom are paying a tuition fee. The first year's tuition is \$150, and in each of the remaining years \$75. All of the student nurses now in the school expect to have a four years' course. The students pay for their uniforms, books, etc.

DR. BARNY, for the Cambridge Hospital: The hospital and training school are two entirely different institutions; the hospital has no training school. The school of which Miss Briggs speaks opened this fall.

MISS KIMBALL, New England Hospital, Boston: I also should say that the quality of our nurses has improved, and in one case there has been a considerable increase in the number of nurses.

DR. WORCESTER: I would like to ask Miss Dorrcher why the scholarships were not applied for.

MISS DORTCHER: I think probably the women did not understand the nature of the scholarship. The application was being accepted when we made a mistake in the school.

DR. WORCESTER: I would like to say a word. I wish the lady who spoke for the New England Hospital might be reminded of the admission she was making. One committee who took charge of the training schools for nurses in America, Miss Kimball.

THE PRESIDENT: I would like to say a word in regard to the preparation of nurses. Most of the training schools are doing something in money. Of course, we cannot have a school which is not on a non-paying basis.

* Report of the Third Semi-annual Meeting.

such as they may need, and most of them pay something in money. I think that it will be found to be a necessity. The Massachusetts General Hospital tried to give up paying and it failed to work. The schools who have made a success of it are those where it does not make any difference whether they have twenty or twenty-five nurses. But in a large charity hospital the number of nurses must be kept up, and those hospitals cannot afford to pay \$21 a week for graduate nurses unless they can get it back from the patients. A large number of young women would find it impossible to take any training were they not paid in money, and some of the best nurses are in that lot. I do not see how we are to keep from paying a small amount. I think most training schools have had some difficulty in getting a proper number of nurses to fill their nursing staff, and I am quite sure that a small sum of money must be paid, say \$6, \$7 or \$8. The McLean has reduced the amount of compensation. Formerly it paid \$14 a month; now it pays \$7 and \$10. We have to pay more for the men, otherwise we cannot get the type of applicant which is needed for a hospital of a special sort. There must be a large number of men nurses employed. Our safety and salvation is to teach them. There is no other way to get what we want, and we pay to get those men. We have to pay them just what we used to, and I suppose we shall have to continue to pay them.

MISS DOLLIVER: I know that the system of not paying nurses has been successful in Johns Hopkins and in the New York hospitals, where the number of nurses must be kept up. I think in New England there are too many hospitals.

DR. TUTTLE: I think it might work once in a while, but not in a large number of hospitals.

DR. WORCESTER: I am sorry that Dr. Tuttle is possessed of so little faith. I should think he could read the handwriting on the wall. What does a little miserable \$6 amount to? I believe that a great many young women are deterred from going into a profession where all payment is made in labor. There are families who would rather pay a fee and have their daughters get longer vacations and shorter hours than have them work it all out. Our experience at Waltham can hardly be placed side by side with the large and famous hospitals, but we now find that when the option is given of payment in part in money and with longer vacations, families are anxious to take that alternative. It seems to me that it is fairly conceded that the nurse in the larger hospital pays for her training in work. Look at the Boston Lying-in Hospital; considerable of the work is done by the men who go there to obtain their education as obstetricians. In my time we were not even given our board there, and, moreover, we were compelled to pay a fee for the chance to go there, day or night. Are not nurses hungry for that training in obstetric nursing? Of course they are. Why, the Massachusetts General Hospital has to send its nurses on to New York for this training! Nurses would be willing to go into such a hospital as the Lying-in Hospital and to pay a small fee for the privilege.

MISS DOLLIVER: I have told what our experience has been, and although that little \$6 a month does seem small, you can see it makes a great difference to the woman who hasn't got it. [Applause.] We tried that thing very hard. We were paying the teachers, we were doing all we could for the pupils when we got them there, but we could not get them. I do not think that the nurses we got were distinctly better than those we got before. I think if we ever get on to a non-paying basis, it has got to be very slowly. We advertised very widely and in many ways tried to get

nurses, but we could not get them until we offered our \$6 a month again.

PRESIDENT: One point that I think is sure to come out if this change ever does come about, and we have nurses paying tuition; that is, that the nurse will have a very different standing in the hospitals. Then the nurse will be on the same basis as the medical student. How the hospitals will like that I do not know; but I feel sure that this change cannot be made, if it is ever made, without changing the basis of the pupil nurse in the hospital.

DR. TUTTLE: It has been said that the compensation is going down. It had to, as you can see, when you consider the number of attendants that have to be employed to take care of the patients.

MISS WALLACE: Is not an insane hospital on rather a different basis than a general hospital? These pupils do not have the same opportunity for private nursing as the nurses in a general hospital.

DR. HUGH CABOT: I think that the discussion is being carried on under somewhat of a misunderstanding. It seems to have been generally assumed that we are all talking about the same class of nurses, — perhaps I might say the same type of nurses, — and I do not think that this is a sound assumption. The nurses with whom Dr. Worcester is dealing and those whom they have at Johns Hopkins are, I think, drawn from a distinctly different class of population from most of the nurses to whom we have been paying a compensation at the Massachusetts Hospital, for instance. There are a considerable number of women interested in nursing and desirous of being trained as nurses, who have not, however, any considerable intention of continuing the practice of nursing as a means of livelihood. A certain number of them have always been found at the Massachusetts Hospital, and I have been interested in following the careers of some ten of them who came under my personal observation. They were women who did not need the small compensation which was given them and could very well have paid handsomely for their training. None of them remained eighteen months in the profession and none of them have left because they married. In a word, I am doubtful whether the average woman who can afford to pay handsomely for her training is likely to be a great addition to the profession of nursing. They are not the stuff of which good nurses are made. It is probably an excellent thing that provision should be made for training dilettantes in nursing, but we must not delude ourselves with the idea that these nurses are to be the bone and sinew of the profession, for they will, as a rule, drift into other fields and acquire fresh interests. Those to whom compensation is a necessity will, I believe, continue in the future as in the past, to furnish the majority of nurses to whom we must look when we need to have real work done. It may well be that from the other class we may draw women willing to devote much time to their training and be in the end, competent to assume executive positions. Such women will need a broader training than any one institution can now give them and they would benefit much by an opportunity to study under various systems and different teachers.

MRS. H. L. BURRELL: I am not one who ever thought that nurses did not pay for their training. I *always* thought they paid well for their training, and I particularly think so to-night, when I see on the last chart how much money the nurses bring to the hospitals during their training. I think it is practical for nurses to pay in money for their training only up to a certain point, for they must have long-continued care of the patients in order to get their training, and this care is of great money value to the hospital. The point I

wish to make here is that a nurse cannot be trained in nursing without actually doing the work, which is of great money value to the hospital. The only part she could justly pay for in money would be supplementary work like the training given at Simmons College. Some say that if they are to be paid you are putting the profession on a commercial basis. If you are going to put it on a commercial basis, you cannot talk about \$14 a month. Of course, we do not want to put it on a commercial basis, but what we do want is to place the nurse in a position where she can do good work without worrying about the debt or the drag upon her family, and without fearing that when she comes out she must face a debt and be tired besides. You cannot get your best work under these conditions. I think it is economy to pay the nurse so that her mind will be free.

THE SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION

EIGHTEENTH ANNUAL MEETING, HELD IN LOUISVILLE, KY., DEC. 12, 13 AND 14, 1905.

(Continued from No. 11, p. 300.)

COMMON DUCT OBSTRUCTION.

DR. J. WESLEY LONG, of Cincinnati, N. C., stated that, as compared with gall-stones in the gall bladder, the condition was many times more serious. He quoted the as yet unpublished statistics of the Mayo clinic, where there had been more gall-stone operations done than in any other clinic in the world, showing that in simple gall-stones in the gall bladder, the mortality of operation was less than one-half of one per cent, while the mortality in operations for common duct obstruction ranged from 11.9 per cent in benign cases to 40 per cent in malignant cases. These facts were brought out to emphasize the prophylactic value of operating while the stones were yet in the gall bladder.

Touching the etiology of common duct obstruction, he took the position that practically all cases were due either to stones or to malignant growths which themselves were caused by the irritating presence of stones. Gallstones might exist in the gall bladder for a long while without producing symptoms, but once in the common duct, not only pronounced symptoms, but many serious complications arose. The mortality in these cases was due to the complications, the cholelithiasis, infection, inflammation and exhaustion due to hemorrhage at the operation. He emphasized the fact that common duct obstruction could be treated only by surgical methods. After removal of the obstruction, the first consideration was drainage, since it was imperative to overcome the infection, and, second, that no operation must be deemed finished until the patency of the opening into the duodenum was assured.

Attention was called to the importance of not removing the gall bladder in the operation of cholecystectomy, since stones occasionally reformed in the common duct and in these cases the gall bladder served for drainage.

A number of cases of operation for common duct obstruction occurring in the hands of Dr. Long were reported, showing the profound disturbance caused by the stones, and the great relief afforded by their removal. In one case it was noted that the stones had ulcerated through the side of the gall bladder and into the common duct—an exceedingly rare occurrence.

GANGRENE OF THE GALL BLADDER, RUPTURE OF THE COMMON DUCT. A NEW SIGN.

DR. JOSEPH RANSOHOFF, of Cincinnati, Ohio, reported a case of gangrene of the gall bladder, in a male patient, aged twenty-one, with recovery following operation.

The second case was one of rupture of the common duct with an unusual sign. Operation was done, followed by recovery of the patient.

Although the cases differed in many important points they had enough factors in common to warrant their consideration together. In each of them a rapidly developing peritonitis made an operation imperative as a vital indication. In each the operation revealed a condition which to the naked eye at least had all the earmarks of a peritonitis, which might speedily cause death. In one there was an unruptured but gangrenous gall bladder, the contents of which were proved to be sterile; in the other there were large quantities of free bile in the peritoneum.

He called attention to a sign which was noticed in the case of ruptured duct before the incision was made, and one to which he believed attention had not been directed. It was a localized jaundice of the umbilicus. Although a single case was not usually sufficient to warrant the assumption that something new had been observed, this feature was so marked that he could not refrain from believing that further observation would give to this localized jaundice some value as a sign of free bile in the peritoneal cavity. In the case presented, this feature gained an interest as the staining of the subperitoneal fat with bile was observed in the incision through the abdominal wall. The jaundice was doubtless purely the result of imbibition. It made itself manifest first in the integument of the navel, because this part was thinner than the rest of the abdominal wall.

Total gangrene of the gall bladder had, to his knowledge, not been observed except in the case presented as an affection independent of gallstones. Total gangrene of the gall bladder is rare. In the case reported a most careful search failed to reveal the presence of a stone.

EXPERIENCE WITH DOWNES' ELECTRO-THERMIC ANGIOTRIPE IN PELVIC AND ABDOMINAL SURGERY.

DR. J. WESLEY BOYCE, of Washington, D. C., had employed these angiotripes in 203 abdominal and 27 vaginal operations. These 230 operations had been hysterectomies and panhysterectomies, and the removal of the appendages by the vaginal route, removal of the same structures by the abdominal route, removal of the vermiform appendix, the spleen, the kidney, of parovarian cyst, of portions of the intestines, etc.

The instruments were described in detail; also the technique of application.

In these 230 cases he had two of hemorrhage subsequent to operation. He could not believe the method of hemostasis employed was responsible in either instance. In the first abdominal panhysterectomy was done for severe suppurative inflammation of the appendages of a very feeble and emaciated woman. Three weeks later, after being allowed to walk about for two days, she was seized with hemorrhage from the bowels, stomach and vagina. A mass was touched in the pelvis; her temperature became elevated, as was the pulse rate. The hemorrhage continued for ten days for two weeks without improvement, and then the abdomen was reopened without any form of coagulation, even local being refused by the patient. A large amount of blood coagula was removed from the peritoneal cavity, vagina and abdominal through-out.

through rubber tube drainage installed, and thorough irrigation of the peritoneal cavity, with salt solution, was done after separation of multiform adhesions. Later feces and urine escaped by both ends of the drainage tract. Persistent irrigation and feeding cured her malady and she is a robust woman to-day.

In another, two weeks after vaginal hysterectomy for fibromata, the patient had a sharp vaginal hemorrhage after walking a little more than on previous days. An examination with a Sims speculum revealed a malodorous discharge from the left lateral fornix of the roof of the vagina. The temperature was elevated about one degree. Daily irrigation for a week ended the trouble. In both cases he was confident latent mild infection was responsible for the hemorrhage.

In no other instance had hemorrhage occurred, and he had the simplest and most perfect faith in the hemostatic properties of the instrument.

The advantages of the electro-thermic angiostyle of Downes in pelvic and abdominal surgery seemed to be a more reliable hemostasis than by ligation; freedom from hemorrhage during operation; the ease of its application in locations in which the use of ligatures would be very difficult and uncertain; the greater security against dissemination in radical operations for malignant disease; the ability to sterilize unclean areas before suturing, as in intestinal and appendiceal surgery; lessening of the tendency to the formation of post-operative adhesions; the increased speed in operations, such as removal of the uterus, the appendages, or the vermiform appendix, and the greatly lessened amount of pain following operation.

The disadvantages were the danger of accidental injury of the bladder, rectum and ureter; the necessity of great precision in its employment, and the special care necessary to keep the paraphernalia in good working condition.

DISCUSSION.

DR. ANDREW J. DOWNES, of Philadelphia, Pa., in speaking of his instruments, stated that for four years he had not used a ligature except in the case of a woman upon whom he operated for extra-uterine pregnancy, and who was moribund at the time. He had performed intestinal anastomoses and gastro-enterostomies with his instruments; other surgeons had removed gall bladders, kidneys, etc. Personally, he had done four or five hundred hysterectomies with them, while other surgeons had performed from sixty to seventy hysterectomies with them.

He did not think hemorrhage in the two cases reported by Dr. Bovee could be attributed to the use of his method.

DR. CHARLES P. NOBLE, of Philadelphia, had used the Downes instruments a number of times in cases of removal of the uterus for cancer, and said they were a great advance in this operation. They possessed a number of advantages over the application of the ligature. The chief advantage of the clamps over the ligature was that after the uterine arteries were tied on each side, when one came down to the vaginal plexus, which was the most troublesome part of the operation when using the ligature, the veins were apt to leak and flood the field, requiring a number of ligatures to secure hemostasis around the cut vagina. If these instruments were used, the field would be perfectly dry. There was no trouble from hemorrhage.

From the standpoint of recurrence of cancer, the instruments had not been used long enough to give figures as to results; but one could believe from the work of Byrne that much better results could be obtained with the aid of these instruments than with ligatures, etc.

DR. HOWARD A. KELLY, of Baltimore, said he saw Koith, of Edinburgh, in 1887, remove an ovarian tumor with Skene's instruments; but those instruments were not satisfactory, and when Dr. Downes brought out his instruments he procured a set of them and had found them satisfactory, with the exception that he had not been able as yet to install a satisfactory plant in the Johns Hopkins Hospital for their use.

While the Downes instruments were practical and useful in surgical work, he thought if surgeons exercised more care as to the character of ligatures they used daily, it would limit the use of the Downes method of instrumentation. He referred to the importance of using fine silk ligatures which controlled bleeding from large blood vessels and were practically innocuous.

OPERATION FOR LARGE RECTOCELE.

DR. GEORGE H. NOBLE, of Atlanta, Ga., presented the technique of an operation which was intended only for large rectocele. Small rectocele was relieved by the ordinary perineal operations. In large rectocele not infrequently there was more or less tediousness, loss of blood in the denudation and certain objections to puckering the overstretched and distended tissues together and forcing them into the rectum. Furthermore, there were unsatisfactory results by infecting the strong and resisting recto-vaginal septum. This operation was presented for the purpose of overcoming those objections. In the technique it would be observed that the rectocele is actually resected and that the strong or normal recto-vaginal septum above the weak occluding point is drawn down to the level of the levator ani muscle and securely anchored.

(1) A thorough dilatation of the anus and recleansing of the rectum. (2) Denudation of a wide collar, as it were, the ring around the neck of the rectocele, beginning high up in the vagina and extending near to the promontory of the rectocele. It was unnecessary to remove the mucosa over the last point mentioned, as it was cut away in the resection. By proceeding with the denudation from within outward, the veins of the recto-vaginal septum were cut through at a high point and secured with compression forceps, and the necessity of repeatedly cutting the same vessels in the process of repairing the wound was avoided. (3) Two fingers were placed upon the promontory of the rectocele, carried into the vagina and out through the anus, forcing the rectocele ahead of them, and in this way completely everting it through the anus. It was seized with a pair of forceps at the point where it protruded and was gradually drawn down, step by step, until the lax portions were secured and a feeling of tenseness was felt. If in drawing the anterior rectal wall down the normal parts of the rectum did not come as low as the levator ani, the rectum should be liberated by dissecting it from the vagina, which would permit of further descent and allow all of the overstretched tissues to project beyond the anus. (4) A light pair of compression forceps is then placed upon the neck of the rectocele just external to the anus for the purpose of holding it in position. (5) Two sutures, preferably medium-sized kangaroo tendon, were passed through the unruptured portion of the perineum close to the sphincter ani muscle after the manner Emmet inserts his tension sutures in perineorrhaphy. These two sutures in passing across from side to side should take up the prolapsed portion of the anterior wall of the rectum. When tied, they closely approximated and anchored sound or healthy rectum to the levator ani muscle and rectal vessels in the deep pelvic fascia. (6) The vaginal side of the wound was completed by

doing perineorrhaphy. The protruding rectocele was amputated about three quarters to an inch external to the clamp, and its edges closely sutured with continuous suture of catgut. The case was treated then as an ordinary perineorrhaphy, except that a wet soft dressing was placed over the protruding stump. The stump retracted within the anus in a week's time, and took care of itself.

The author reported five cases, in which he did this operation, with very satisfactory results.

STARVATION AND LOCKED BOWELS FOR FROM TEN DAYS TO TWO WEEKS.

Dr. Howard A. Kelly, of Baltimore, Md., offered for a more extended trial in other fields as well a method of "after-treatment" which he had used in some fifteen cases, for the most part in complete tears of the recto-vaginal septum. The treatment consisted in two parts; first, a very limited diet for from ten to fifteen days; and, second, the locking up of the bowels during this period.

The food was limited to albumin and water, giving nothing the day following operation, and but 1 dr. every three hours in the second day, and increasing this a dram each day until the patient was taking 4 dr. every three hours. In this way the patient was fed in all in a period of ten days not quite three pints of albumin and absolutely no other food. One patient was continued for fifteen days on this diet and without an evacuation. At least two very frail patients had been treated in this way. When the evacuation took place, 2 dr. of licorice powder were given and in some cases an oil enema, and the passage was secured with the patient lying on her side so as to avoid any straining. In no case were there any scybala, or was there any difficulty with the evacuations.

Dr. Kelly thought this starvation plan of treatment might have a wider range of utility in treating dyspepsias and cases of hysteria, as well as in all kinds of plastic operations on the intestinal tract.

SURGICAL TREATMENT OF CANCER OF THE HEAD AND NECK, WITH A SUMMARY OF A HUNDRED AND TWENTY-EIGHT OPERATIONS PERFORMED UPON A HUNDRED AND TEN CASES.

Dr. GEORGE W. CHASE, of Cleveland, Ohio, in a paper on this subject, presented general conclusions to the effect that since the head and neck present an exposed field, cancer here, unlike that of the stomach, the intestines or even the breast, might be recognized at its very beginning; that every case was at some time curable by complete excision; that the field of regional metastasis was exceptionally accessible; that cancer rarely penetrated beyond the extraordinary lymphatic collar of the neck, that the growth tended to remain here localized, and that by freely utilizing all the modern resources of surgery, and by freely utilizing all the modern resources of surgery, by applying the same comprehensive block dissection, as in the radical operation for breast cancer, the final outcome in the surgical treatment of cancer of the head and neck should be not only as good, but even better than that of almost any other portion of the body.

WANDERING OR ADHERENT RETROPERITONEAL FIBROID TUMORS OF UTERINE ORIGIN.

Dr. I. S. STONE, of Washington, D. C., stated that these tumors must reach the space behind the peritoneum by way of the broad ligament. This route was the only one open and was necessarily followed by every fibroid which escaped into any part of the retroperitoneal space, however remote. After a fibroid

became well separated from the uterus, it usually remained in the broad ligament indefinitely, and would always do so unless other tumors developed in the uterus and were forced to follow directly in the same channel as the one preceding. It would be observed that single tumors were generally found in the broad ligament and the development of others must occur before we could have the variety we were studying. Many subperitoneal tumors were seen and few indeed had been noticed where the tumor had lost all connection with the uterus. Such growths could not become parasitic, and receive their nutrition from some other source, as did the intraperitoneal wandering or parasitic variety. He had no experience with a single wandering tumor behind the peritoneum which had entirely lost its uterine connections, and believed such development an impossibility for the reason mentioned above that a *vis a tergo* must exist. The movement of these tumors was, therefore, directly opposite to that of the intraperitoneal variety, for the latter must have either movable organs to assist in their progress, or else traction, a result of adhesive contact, must aid in the lifting or elevation of them upward in the abdominal cavity.

Dr. Stone reported two cases illustrating the variety he described in his paper. Both of these had grown to very large proportions. In the first, the largest tumor was very high in the abdomen, and was entirely separate from all former uterine connection including its blood supply. The presence of a large wedge-shaped middle portion was sufficient proof of the mode of development. It had forced other growths both upwards and downwards, acting as a wedge between the two. In the second case the central portion of the specimen was made up of many small tumors which had appeared to force the larger growths in opposite directions, as in the first one. The largest growth was highest, and was completely separated from the uterus and the tumors below, except by a small amount of connective tissue, and its anterior peritoneal cover. The pelvic tumors in both of these cases were firmly impacted, and in the second case it was impossible to release the specimen without injury to deep and unseen vessels which resulted in fatal hemorrhage. The first patient made a fairly satisfactory recovery, and was now able to attend to her duties as housekeeper.

(To be continued.)

Recent Literature.

1. *Textbook on Modern Maternal Medicine and Therapeutics.* By A. A. SIMMONS, A.M., M.D., Lecturer on Physical Diagnosis, University of Pennsylvania; Professor of Pathology, Woman's Medical College of Philadelphia. Fourth edition revised. Octavo of 670 pages. Philadelphia and London: W. B. Saunders Co., 1905.

The book is well written, well arranged and well indexed and conforms to the new (1905) Pharmacopoeia. The greater part of the volume is devoted to maternal medicine about one sixth to applied therapeutics. New articles have been added on scurvy, erythema, the menstrual and rubra with considerable new matter in the section on radiotherapy.

The work has something to offer to all of reference in the absence of reference to the various authors quoted in the text.

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THE PROGNOSIS IN EPILEPSY.

It is clear that our ultimate knowledge of the treatment of epilepsy must come from the study of a large number of patients observed under the most favorable conditions. This opportunity is being more and more offered year by year by the development of colonies and by the lapse of time which permits of the increasingly accurate observation of results. We look, therefore, each year with interest to the reports of the established colonies for the treatment of the disease and are rarely disappointed in finding experience or suggestions of value therein.

We have before us the annual report of the Craig Colony, a considerable portion of which is taken up with the report of the medical superintendent, Dr. William P. Spratling. For some years Dr. Spratling has taken an optimistic view regarding the treatment of epilepsy, and this, his latest report, proves confirmatory of ideas which he has previously expressed. He points out the desirability of earlier admissions if the best results are to be obtained. But twenty-five of the 1887 patients, hitherto admitted to the colony, had suffered from epilepsy less than a year at the time of admission. In fact, the largest number admitted had had the disease for many years and, therefore, could not be regarded as hopeful subjects for treatment. This is the more unfortunate inasmuch as epilepsy is essentially a disease of early life. The interesting statement is made that epilepsy is more common between birth and the fifth year than at any other period, and the next most common period is between the

tenth and the fifteenth year. In spite of the gross similarity between epileptics, Dr. Spratling insists on a close study of the individual as a prerequisite to success in treatment. It is an erroneous idea to suppose that the individual element is neglected in colony treatment in spite of the large number of patients under supervision.

Dr. Spratling speaks confidently of the curability of epilepsy. The statement is made that in from five to ten per cent. of the chronic cases at the colony a complete cure is effected. In other cases the seizures may be indefinitely arrested if the patients will live rigorously and in the prescribed manner. Freedom from epilepsy is held to be often merely a matter of right living. This freedom, however, cannot be secured in many cases by residence away from the colony. One patient is reported, who, after an immunity of twelve months from seizures and who in another twelve months would have been discharged cured, on a vacation of a month at home had five attacks in twenty days. The small things, according to Dr. Spratling, count for much, and it is Dr. Spratling's conviction that when epilepsy comes to be as rationally treated as tuberculosis is growing to be the percentage of cures will be from twenty-five to thirty per cent. or more. While admitting that Dr. Spratling has every reason to speak with authority in this matter, we are inclined to think that a more exact definition of what is meant by a cure is desirable. Certainly, immunity from attacks for two years, while at the colony, should not be regarded as a cure, if the attacks forthwith recur on return to ordinary life. The opinion frequently expressed of late by Dr. Spratling that the bromides have been used too much in epilepsy is reiterated. Approximately one half the cases at Sonyea are treated without the drug, and a larger dose than 20 gr. of the bromide of potash three times a day is seldom necessary.

Dr. Spratling's hopefulness is gratifying. We do not for a moment suppose that he speaks unadvisedly, and the whole tenor of succeeding reports goes to impress the fact that simplicity of life, a minimum drug treatment, and the avoidance of small sources of irritation, together with the study of the entire individual, are the essentials to success in treatment. That these conditions can be obtained better in colony life than in the individual home is self-evident. No doubt these hospitals, as many others, will grow more popular as time passes and their usefulness is increasingly demonstrated.

MEDICAL INSPECTION IN THE MASSACHUSETTS PUBLIC SCHOOLS.

A BILL now before the Massachusetts legislature, looking to the protection of the health of children in the public schools, should receive universal support. The committee having this bill in charge, under the chairmanship of Dr R. C. Cabot, is composed of a number of men and women who have the best interests of the Massachusetts schools at heart. The essential provisions of the bill are to provide prompt medical inspection of all children in the public schools who show signs of being in ill health and of those returning to school after absence, together with the exclusion of those having serious infectious disease, and systematic notification of parents. It also provides for an annual inspection of the children with a view to discovering defects in the special senses which are often a hindrance to the school work, both from the standpoint of teacher and pupil. Governor Guild and Dr H. P. Walcott have both indorsed the bill, as in fact it must be indorsed by all who take a broad view of the problems of secondary education.

The prompt detection of acute disease is manifestly of the greatest importance in the preservation of the public health. The ease with which contagion may be spread through school children is too manifest to require argument or reiteration. A case is reported which points a very distinct moral, of a boy in a New York school who passed round among his fellow scholars pieces of his skin; he had just recovered from scarlet fever. The matter of the detection of physical defects is somewhat more subtle but easy of accomplishment if the right machinery be brought to bear. It has been shown that approximately 25% of school children need glasses in order to do their work properly, and that about 5% are sufficiently defective in hearing to interfere with their school work. Teachers, unless specially trained, are unlikely to detect these defects, to the manifest detriment of the child. Punishment is not infrequently meted out to such defectives and they are placed in the category of the mentally inferior wholly from a failure to recognize the existing conditions. Truancy it is maintained frequently results from undetected physical defect although usually otherwise interpreted. In a plea for the passage of the bill the Massachusetts Civic League makes the following pertinent statements:

Our law obliges every child to go to school. Ought it not also to provide that when he gets there he shall not be liable to such injuries as

these? There can be no doubt as to the right to make such inspection. If it is the function of the school to teach the child to read, it may surely also ascertain whether he can see the letters. If it is its function to give him oral instruction, it must have the right to find out whether he can hear.

The cost of instituting the necessary reforms would be trifling in view of the advantages to be gained. It is essentially a campaign of education to instruct the teachers in the importance of recognizing signs of approaching illness or evidences of physical defect and to provide competent persons to verify or not, as the case may be, the suspicions of the teachers. It is evident that a comparatively simple system, carefully carried out in its details, would prevent much unnecessary suffering and would tend toward the best development of the pupils in the accomplishment of their preliminary education. Public opinion will undoubtedly support the bill and we have no doubt that the arguments in its favor will prove conclusive in the minds of the legislators.

MEDICAL INSPECTION OF PUBLIC SCHOOLS IN NEW YORK.

HEALTH COMMISSIONER DARLINGTON contributes an article on "The System of Medical School Inspection in the City of New York" to the annual report of the superintendent of the public schools, which has just been issued.

Boston was the first municipality in this country to introduce medical inspection in the public schools (1891). The system has been adopted in some fifteen of the Massachusetts cities and towns, and is being taken up in other states and cities. It has been carried further in Europe, especially in France and Prussia than it has in America. Mexico has a good system.

Dr. Darlington is, however, justified in claiming that although New York was not the first city to undertake medical inspection of school children, it has to-day the most comprehensive and highly developed system of any city on this continent and perhaps in the world, and he gives a sketch of the progress made in this department. In 1897 one hundred and fifty physicians were appointed medical inspectors, and each assigned to the supervision of from three to five schools. Each morning the inspector examines all children referred to him as possible sources of contagion. In June, 1902, six oculists were appointed to make special examinations of the children's eyes, with particular reference to trachoma. Beginning with September, 1902, in

addition to the daily morning inspections mentioned, each class room was visited once a week by the inspector. As a result of this inspection in the class rooms, 10,567 children were excluded from school during the first week of the service. In December, 1902, with a view to limit the duration of the periods of exclusion as far as consistent with the control of the source of contagion, a corps of school nurses, with a supervising nurse, was appointed. Each nurse visits the schools to which she is assigned every morning, and attends at its home each excluded child. The child is furnished with a diagnosis card, and as soon as the danger of infection has been eliminated the nurse returns the child to school, where an examination is again made by the medical inspector. Of course, the more serious cases receive treatment by physicians, in addition to the care of the nurse. In this way the child loses only a minimum of time from the class room, and statistics show that 98% of the excluded children are almost immediately enabled to resume their school attendance without exposing other children to the risk of contagion. Since March, 1905, the routine class room inspection has been made by the medical inspector only once a month. The nurse makes the weekly inspection, and refers all suspected cases to the inspector, who makes the diagnosis. A supplementary feature of the work is that each day the medical inspectors obtain from the school principals the names of all children who have been absent for three days or more without assigned cause. These children are visited in their homes, and in this way a large number of unreported cases of contagious disease have been discovered.

MEDICAL NOTES.

ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION. — The British Medical Association will hold its annual meeting this year at Toronto from Aug. 21 to Aug. 25. The president is George C. Franklin, F.R.C.S., of Leicester, England. The president-elect is R. A. Reeve, M.D., LL.D., of Toronto.

HONORS TO DR. G. L. SIMMONS. — The Sacramento Society for Medical Improvement on March 13 gave a dinner in commemoration of the fiftieth anniversary of Dr. G. L. Simmons's graduation in medicine. Many physicians were present, not only from Sacramento, but from neighboring cities, and numerous telegrams of regret were received from physicians unable to be present.

A loving cup was presented to Dr. Simmons, and several appreciative speeches were made commemorative of his work both as a man and a physician. Dr. Simmons was a graduate of the Harvard Medical School in the class of 1856, ex-President of the California State Medical Society and founder of the Sacramento Society for Medical Improvement, a worthy offspring of the Boston Society of the same name, which has been long influential in the medical history of this city.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, March 21, 1906, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 35, scarlatina 28, typhoid fever 6, measles 185, tuberculosis 46, smallpox 0.

The death-rate of the reported deaths for the week ending March 21, 1906, was 22.78.

BOSTON MORTALITY STATISTICS. — The total number of deaths reported to the Board of Health for the week ending Saturday, March 17, 1906, was 224, against 233 the corresponding week of last year, showing a decrease of 9 deaths and making the death-rate for the week 19.63. Of this number 98 were males and 126 were females; 219 were white and 5 colored; 138 were born in the United States, 81 in foreign countries and 5 unknown; 46 were of American parentage, 154 of foreign parentage and 24 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 35 cases and 2 deaths; scarlatina, 34 cases, no deaths; typhoid fever, 6 cases and no deaths; measles, 204 cases and 4 deaths; tuberculosis, 78 cases and 26 deaths; smallpox, no cases and no deaths. The deaths from pneumonia were 31, whooping cough 0, heart disease 20, bronchitis 4, and marasmus 4. There were 14 deaths from violent causes. The number of children who died under one year was 37; the number under five years, 59. The number of persons who died over sixty years of age was 56. The deaths in public institutions were 67.

There were 2 deaths and 1 case of cerebro-spinal meningitis reported during the week.

ANTIVIVISECTIONISTS HAVE LEAVE TO WITHDRAW. — The Committee on Probate and Chancery in the Massachusetts Senate have reported leave to withdraw on the petition of Elizabeth Stuart Phelps Ward and others to prohibit vivisection. The hearings this year were less animated than heretofore.

POISONING BY WOOD ALCOHOL.—Medical Examiner William D. Swan has reported to the Cambridge (Mass.) Board of Health that the recent sudden death of a female student at Radcliffe was due to poisoning by wood alcohol. This death was at first attributed to "overwork."

BILLS BEFORE THE LEGISLATURE.—A bill introduced by Frederick W. Peabody directed especially against Christian Science has been reported by the committee in charge leave to withdraw. The committee reported leave to withdraw on a bill providing for a state board of registration in osteopathy. Several other bills relating to the practice of medicine were also given leave to withdraw.

MIDDLESEX EAST DISTRICT MEDICAL SOCIETY.—The Middlesex East District Medical Society held its regular monthly meeting at the American House, Boston, Wednesday evening, March 14. Dr. Silas H. Parks, president, in the chair. The paper of the evening was by Dr. E. S. Jack. In accordance with the vote of a previous meeting the president appointed the following a committee on the prevention and control of tuberculosis: Dr. George F. Dow, Reading; Dr. Richard Dutton, Wakefield; Dr. Francis E. Park, Stoneham; Dr. Ralph R. Stratton, Melrose; Dr. William H. Keeler, Woburn; Dr. Harold Gale, Winchester; C. W. Harlow, M.D., secretary.

BOLLARD PROFESSORSHIP OF NEUROPATHOLOGY.—The text of the deed of gift of a newly established chair in neuropathology in Harvard University is as follows: "In memory of William Story Bollard, East India merchant of Boston, who was for twenty-three years a trustee of the McLean Asylum, to record his unflinching interest in the relief of sufferers from nervous or mental disease and his belief in benefits from future scientific research, I, Louisa Norton Bollard, his widow, give for myself and our children the sum of fifty thousand dollars to the president and fellows of Harvard College for the endowment of a professorship in neuropathology to be entitled the Bollard Professorship of Neuropathology. This professorship shall embrace study, research, investigation and teaching in relation to disease of the nervous system, whether functional or organic, and shall include not only the affection ordinarily classed under neurology but all mental diseases and disturbances, both those classed under psychiatry and any others that may exist. The methods and detail of work

under this professorship are not restricted. It should include any form of research and investigation which may lead to the increase of knowledge of nervous or mental disease. It comprises the comparative study of these diseases in animals and other living forms."

NEW YORK.

ADDITION TO ST. JOHN'S HOSPITAL.—The Sisters of St. Joseph, who have the direction of St. John's Hospital in Long Island City, have filed plans for an addition to the building to cost \$200,000. The new wing will face Jackson Avenue and will be larger than the present building, which has a capacity of seventy beds.

ABUSES IN USE OF PATENT MEDICINE.

During the present season, as a result of public sentiment on the abuses attending the use of patent medicines, there has been organized the "New York State General Committee for Safeguarding the Sale of Narcotics." William A. Jenner is chairman; Wm. T. Wardwell, first vice-chairman, and Dr. A. Jacobi, second vice-chairman, and among the members of the Executive Committee are Drs. W. Gilman Thompson, E. Eliot Harris and Wisner R. Townsend. Under the direction of the committee a bill was drafted by such men as Bishop Doane of Albany, Bishop Greer of New York, ex-Mayor Low, Prof. Charles F. Chandler, Prof. Charles Baskerville, and Dr. Ernst J. Lederle. It is entitled "An act to amend the public health law by providing for the proper labeling of proprietary and other medicinal preparations containing alcohol or narcotic or other powerful drugs, and for the inspection, analysis and regulation of the manufacture and sale of the same." This bill was duly introduced in both branches of the legislature, and on March 14 a hearing was given it before the Senate Committee on Public Health. Among those who spoke in favor of its passage were Dr. H. F. K. Shaw of Albany and Drs. Edward C. Janeway and Albert I. Weston of New York. The principal opposition to the bill, it is stated, comes from the Proprietary Medicine Association of America.

Miscellany.

THE BORDER LINE IN MEDICINE AND SURGERY.

E. C. JANEWAY states that the rule which should be formulated in a physician's mind is that no operation should be performed without a cer-

ful examination of the body by a person competent to form an intelligent opinion. Certain cases arise in the experience of every physician in which the operation performed amounts practically to taking a surgical chance in hopeless diseases. If also in such a case a large fee is charged, surgery is apt to be brought into more or less disrepute. Before an operation a thorough inquiry should be made as to drugs which have been taken or administered. This is especially true in those cases in which the debatable point concerns nervous diseases. It is a complaint of some surgeons that cases of malignant growth are brought to them at a late stage. Time is a great aid in establishing the diagnosis, and oftentimes a case which is obscure to the medical predecessor is cleared up for the one who succeeds him. The question of cardiac strength is often as interesting to the surgeon as to the physician. Many people fear heart failure under anesthesia. Observation has shown that many patients with heart lesions have undergone operative procedures most satisfactorily. It is always well to emphasize to a patient the importance of employing a thoroughly competent anesthetist. In cases of prolonged jaundice the physician has the responsibility of considering the danger of hemorrhage which might lead to a fatal result after operation. The writer is impressed, however, with the necessity of early operation in suitable cases. Kidney disease is no longer considered such a drawback to surgical procedures as it once was. The writer admits that he does not feel inclined to urge a patient to undergo dubious palliative treatment. — *Medical Record*, March 17, 1906.

Correspondence.

EUTHANASIA — DEGENERATED SYMPATHY.

BOSTON, February, 1906.

Mr. Editor: The subject of "Degenerated Sympathy," discussed and dismissed very briefly by a leading medical journal, is too important to be put aside with a sneer, and is worthy of more extended and respectful consideration than was there given it.

The propositions alluded to in this article seem to indicate a wider spread of sentiments, neither new nor obsolete, than has been hitherto apparent upon the surface. They are not entertained solely by the immoral, insensible, cranky or degenerate, nor are they so rare among the medical profession, in a class much higher than that of the common hangman, as some of the comments would lead one to suppose.

The discussion of them is most appropriate in the journals which bring the great problems of life, death, suffering and crime most nearly home to the men who are in daily contact with them and whose work is their relief.

Reference is made to the recommendation of a "reforming woman to kill off the incurables" and of another to "murder the children in the slums" and to the "moral aberration" of Professor Norton who proposes to make away with the "hopelessly insane, diseased and injured." Since the article appeared there have been many comments upon a bill introduced (and rejected) in the Ohio legislature giving permission to physicians to fatally anesthetize persons hopelessly ill who ask for the privilege. A bill has been introduced into the New York legislature making any advocacy of such propositions a felony. Just

where any of these or similar schemes would stop is a matter which may be passed over until it is settled that we have any right to carry them out under any circumstances.

Although the responsibility for terminating useless, painful and harmful lives would not rest upon physicians as such, yet the practical application of it would depend largely upon their opinions and they would see much more of its workings than any other class. Beside this, although the duty of the physician is towards his patient first of all, and always as against any adverse interest, he is often called upon to consider the welfare of friends; while outside of professional relations he has the same rights and duties toward the community that any other citizen has.

We all know what the moral and legal rule is at present; that the life of the individual is to be sustained as long as possible without regard to its value to the possessor, his friends or the community, even when the possessor would be gladly released from the intolerable burden; that the taking of a life which is surely near its end of suffering is just as much a homicide as if it were one of prospective happiness and of the greatest value to the world.

What, I think we should ask calmly and without prejudice, is whether, in the interests of humanity and mercy as well as of the welfare of the community, we are not justified in adopting some modification in rendering it less absolute.

The whole conduct of life, by the normal as well as the degenerate, consists in the balancing of probabilities, and we have a right to take into the account probabilities, possibilities and prospects when there is thrown upon us a more or less complete responsibility for others. We value a life now for what it offers to its possessor or his friends in the way of development and enjoyment, and to the community in usefulness or, perhaps, on the other hand, in harm and danger.

The right to take the life of another is recognized in the individual who is threatened with the loss of his own, and in the community when that of a criminal becomes a menace.

The right of the community to accept the sacrifice of life from members is admitted in the endangering of it by almost any great industrial enterprise. We admit the hideous sacrifices of war, for which we select the best and reject many who could well be spared, and in times of stress do not wait for the sacrifice to be a voluntary one. A few workmen must fall from the bridge that the multitude need not suffer the inconvenience of the ferry. Crowds throng to exhibitions in which the principal object of attraction is the chance of the performer being killed. We are by no means careful of life in general.

It is only when the question comes to the life of some definite individual, when it is our friend, or some one on whom the community focuses its attention, when it is the one man or one woman about whom the papers and the public are for the moment talking, and not merely the undetermined few taken at random from among unknown thousands, — that the sacredness of life comes to the front for practical recognition.

I may not knowingly administer a fatal dose of morphine to the anencephalous monster, but I may without legal restraint distribute the same drug wholesale among normal persons so long as no one can point out which particular ones will have the possibilities of a useful life destroyed. A courageous governor may not order the carrying into execution of a just sentence upon an acknowledged murderer of the lowest type without awakening horror-stricken comments and protests, but he might with approval have vetoed a bill which would protect the lives of thousands of travelers if his decision were in the interests of commercial prosperity.

In fact, life in the abstract, a percentage of life in a mass, weighs but lightly in the balance against other considerations which involve its destruction, but when the necessity or policy of its loss narrows down to the one selected life, then the pity, conscience and religious sentiment of the community go out in an instinctive repugnance to the taking of it.

This reverence for the individual human life without regard to its value, this respect for the mere functions of respiration and heart beat which may go on without the

least trace of consciousness, and with an intelligence which can by no possibility be made to rise to that of a brute (so called), or which has fallen hopelessly below it; this moral and religious principle, as we consider it, is in reality a sentiment, based indeed for the most part upon a principle, but not a reasoned or reasonable conviction which should be allowed to control in all cases the sense of humanity to the patient or the welfare of the community.

It is the deeply rooted and admirable instinct—mother-instinct, if you will, of protection to the helpless, which preserves the existence of the lowest of beings in the human form and which prolongs the stay of those dear to us after they themselves have ceased from all the higher functions or are carrying a burden which they would gladly lay down.

That there exists in some minds a rudimentary perception of our right to consider in our treatment the value of individual lives may be seen in the impression, of which the physician sometimes becomes aware, that it is his duty to take away at birth the life of certain monsters, and he may be reproached for not having done so by those who would not take the responsibility themselves.

This right or duty, although in every respect contributory to the public welfare, has never been conceded by the code of professional ethics. In the case of the anencephalous fetus the question is of no great importance practically, for nature soon settles it, but from this up an unbroken series can be formed through human infants whose mental and moral characteristics must always remain below those of the brutes but whose viability may be equal to the normal.

At the other end of life we may arrive at a stage when all cerebral structure will have degenerated, when mental, moral and emotional action will have ceased, and there remains nothing but the external form with its associations of memory to show that it has been the abiding place of a soul now evicted. Would it not be a more respectful treatment of the loved ones, a more dignified ending of a worthy life, if respiration were allowed to cease when all higher functions have irrevocably departed? Would not memories associated with a previous life of its fullness and beauty be more precious than these dependent upon the prolongation of the lowest animal existence?

To those who are in full possession of their psychic functions, but to whom life can never be anything but a prolongation of suffering, the physician and surgeon are constantly offering the chance of relief at the price of danger to life. They undertake the operation or the administration of the drug which they know will bring relief to pain, which they hope will prolong life a little, but which both patient and surgeon know may bring death sooner than it would otherwise come. It is their duty to do it. The surgeon is shirking his duty if he refuses to give the relief which an operation would afford for fear of the death which would impair his statistics. Is it not as humane, as merciful, and just as reasonable to select for death those who are longing for it and for whom we know that life has nothing to offer but a prolongation of suffering, as to distribute the chances of it over many days and months?

The proposed "murder of the children in the slums" of the writer be correctly quoted. I admit the full lucidness of, but not having seen the original proposition I venture to suggest that it is quite likely that the writer used this expression as a rhetorical exaggeration to express her horror of slums, an energetic protest against their existence, rather than as a serious plan to do away with their effects.

The objections to any such plans upon the practical side are at once obvious in the abuses which might come in the hands of the unscrupulous, but it is, it seems to me, the ethical question rather than the practical one which should first be brought to some agreement among those who are neither unscrupulous nor reckless, or devoid of conscience or natural affections. If the principle were admitted by such it would not be difficult to surround its application with as many safeguards as are now thrown around that deprivation of liberty and the pursuit of happiness which equally with life are supposed to be our constitutional rights which have now involved in sending a patient to an asylum.

It is not necessary to go back many years to arrive at a

time when the same sort of accusations of abuse were made in regard to this procedure, which we now look upon as an immense advance upon the system which gave the care of such cases to families and almshouses.

Certainly, precautions much less stringent than those now employed for keeping the murderer from his just doom would make abuse quite as near to impossibility.

I should like to call your attention and that of some of the secular papers to an editorial on Euthanasia in the *New York Medical Record* of some twenty years ago. It shows that the proposition of introduction into the Ohio legislature, which has called out so many unfavorable comments from the lay press, was no novelty, but that its author was simply a man who had the courage of his convictions and the convictions of many others.

It seems to me very clear from this article, as well as from conversations with physicians and others, that it is the feeling of dislike and aversion to a direct, definite and complete responsibility for the taking of life, which makes men decline to take 100% of it when they are fully convinced, and show by their deeds that they are aware of their duty to take 99% in behalf of their suffering patients.

It is the same feeling which at a military execution leads one gun of the firing party with blank cartridge in order that each one, who perhaps would have no hesitation about pouring a storm of bullets from an almost unaiming machine into a crowd of his fellow men, may flatter himself that he has not the death of a comrade upon his conscience.

Very truly yours,

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"THE MEDICAL PROFESSION AND THE MEDICAL JOURNALS IN RELATION TO NOSTRUMS."

THE MEDICAL SOCIETY OF THE COUNTY OF WILSON.
THE COUNTY BOARD OF HEALTH.

CAMDEN, ATLANTA, March 10, 1906.

Mr. Editor: I have just read with a great deal of interest the article under the head of "The Medical Profession and the Medical Journals in Relation to NostRUMS" in your issue of March 1, 1906. As one who fills his own prescriptions, as a necessity, not choice, I find that there are among the proprietary medicines, so-called nostrums, some which are of such excellent therapeutic qualities that to discard them would be doing an injustice to the patient, for the reason that there are not 10% of the country physicians who are qualified to fill any prescription that requires the amount of skill these do. If they attempted to make any internal antiseptic solution like the one in mind, I fear that they would fail or if they wanted a solution of iron, potassium and manganese, could they make it? If not, why not use the best, which is a proprietary medicine? The author criticizes this preparation on account of its mal-formed name, not its inefficacy. All of us have heard our grandmothers suggest clay for bruises, sprains, etc., and now that we can get clay as an elegant preparation, should we not take advantage of it? There are a few other preparations of equal efficiency that should be retained as a part of our armamentarium. As for the advertisements of these preparations in the medical journals, does the doctor think that if the journals refuse to accept the advertisements, all of the firms selling proprietary are going out of business? On the contrary, they will form a journal of their own, procure the services of a Board of Editors composed of physicians, and continue to put their preparations before the eye of the profession or what is worse, they will send advertisers to the Editor through the mails and newspapers. Is it not far better to have the dealer under the control of the profession, as they now are, than to force them to look to the people for support? We can choose the efficient preparation and discard the inefficient ones. The latter will not use such discretion, but will accept them according to their own all-around ideas. Shall the physician accept badly prepared proprietary or shall the people procure a better one?

R. O. SEYMOUR, M.D., Editor.

Camden, N. J., March 10, 1906.

RECORD OF MORTALITY FOR THE WEEK ENDING SATURDAY, MARCH 10, 1906.

| CITIES. | Reported deaths | | CITIES. | Reported deaths | |
|------------------------|-----------------|--------------------------|-----------------------|-----------------|--------------------------|
| | In each. | Deaths under five years. | | In each. | Deaths under five years. |
| New York | 1,634 | 527 | Quincy | 33 | 1 |
| Chicago | 697 | 151 | Waltham | — | 1 |
| Philadelphia | 634 | 204 | Gloucester | — | — |
| St. Louis | — | — | Pittsfield | 10 | 3 |
| Baltimore | 222 | 64 | Rockport | — | 0 |
| Cleveland | — | — | North Adams | 2 | 2 |
| Buffalo | — | — | Chicopee | 4 | 1 |
| Pittsburg | — | — | Northampton | 13 | 2 |
| Cincinnati | — | — | Medford | 7 | 1 |
| Milwaukee | — | — | Beverly | 9 | 3 |
| Washington | — | — | Hyde Park | — | 3 |
| Providence | 65 | 24 | Newburyport | 4 | 0 |
| Boston | 250 | 74 | Leominster | — | — |
| Worcester | 48 | 12 | Melrose | 3 | 1 |
| Fall River | 45 | 18 | Woburn | 1 | 0 |
| Cambridge | 20 | 8 | Marlborough | 4 | 0 |
| Lowell | 40 | 16 | Westfield | 2 | — |
| Lynn | 37 | 11 | Peabody | — | — |
| New Bedford | 30 | 13 | Revere | 5 | 1 |
| Springfield | 18 | 6 | Clinton | — | 2 |
| Lawrence | 31 | 14 | Attleboro | — | — |
| Somerville | 12 | 1 | Adams | — | — |
| Holyoke | 23 | 10 | Gardner | 2 | — |
| Brookton | 11 | 3 | Milford | — | — |
| Malden | 10 | 3 | Weymouth | — | — |
| Salem | 16 | 7 | Frammingham | — | — |
| Celsea | 12 | 4 | Watertown | 0 | — |
| Haverhill | 13 | 1 | Plymouth | — | — |
| Newton | 9 | 2 | Southbridge | 3 | 1 |
| Fitchburg | 3 | 3 | Wakefield | — | — |
| Taunton | 2 | 2 | Webster | — | — |
| Everett | 3 | 1 | | | |

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING MARCH 17, 1906.

H. A. DUNN, passed assistant surgeon. Detached from the naval proving ground, Indian Head, Md., and ordered to the "Princeton."

J. D. MANCHESTER, assistant surgeon. Detached from the "Princeton" and ordered home to wait orders.

M. W. BAKER, passed assistant surgeon. Detached from the Naval Hospital, Washington, D. C., and ordered to the Naval Hospital, New York, N. Y.

F. D. CHAPPELEAR, acting assistant surgeon. Ordered to the Naval Hospital, Washington, D. C.

C. D. LANGHORNE, surgeon. Detached from the "Denver" and ordered home to wait orders.

G. P. LUNDEN, surgeon. Detached from the "Olympia," when put out of commission, and ordered to the "Minneapolis."

O. D. NORTON, surgeon. Detached from the "Minneapolis" and ordered home to wait orders.

R. W. PLUMMER, passed assistant surgeon. Detached from the naval sub-recruiting station, St. Joseph, Mo., and ordered to the "Denver."

W. B. SMITH, assistant surgeon. Detached from the "Olympia," when put out of commission, and ordered to the "Hancock."

I. F. CONE, J. FLINT, assistant surgeons. Appointed assistant surgeons with rank of lieutenant, junior grade, from Feb. 28, 1906.

APPOINTMENT.

CHARLES HARRINGTON, M.D., Secretary of the Mass. State Board of Health, has been appointed Professor of Hygiene in the Medical School of Harvard University.

RECENT DEATHS.

DR. LEOPOLD HIRSCHMANN of New York died on March 15, at the age of thirty-five years. He was born in Germany and was a graduate of Cornell University and of the Cornell Medical School.

DR. SAMUEL H. FREEMAN of Albany, N. Y., died on March 15.

DR. LAWRENCE J. GEROLD, assistant surgeon of the State Soldiers' Home Hospital at Bath, N. Y., died from cardiac disease on March 16. He was forty-one years of age, and was formerly assistant physician at the Kings Park branch of the Long Island State Hospital for the Insane.

DR. PETER V. P. HEWLETT of Newark, N. J., county physician of Essex County, died on March 13, at the age of fifty-nine years.

BOOKS AND PAMPHLETS RECEIVED.

Movable Kidney. A Cause of Insanity, Headache, Neurasthenia, Insomnia, Mental Failure and Other Disorders of the Nervous System. A Cause also of Dilatation of the Stomach. By C. W. Suckling, M.D. (Lond.). M.R.C.P. Illustrated. London: H. K. Lewis. 1905.

Radiotherapy in Skin Disease. By Dr. J. Belot. With a Preface by Dr. L. Brocq. Translated by W. Deane Butcher, M.R.C.S. Only authorized translation from the second French edition. Illustrated. London: Rebusan, Limited. New York: Rebusan Co. 1905.

New York State Library Year-book of Legislation. 1904. Edited by Robert H. Whitten, Sociology Librarian. Albany. 1905.

The Practitioner's Visiting List. Philadelphia and New York: Lea Brothers & Co. 1906.

Thirty-sixth Annual Report of the State Board of Health of Massachusetts. 1905.

Studies from the Rockefeller Institute for Medical Research. Reprints. Vol. III, 1905.

Studies in the Surgical Anatomy of the Small Intestine and its Mesentery. By George H. Monks, M.D. Reprint.

Clinical and Pathological Papers from the Lakeside Hospital, Cleveland. Series II, 1905.

The Harvard Embryological Collection. By Charles Sedgwick Minot, LL.D., D.Sc. Reprint.

Veneral Phylaxis. By Albert E. Carrier. Reprint.

Materia Medica for Nurses. By John E. Groff, Ph.G. Third edition, revised, with an appendix giving list of questions for self-examination. Based upon eighth decennial revision of the U. S. Pharmacopoeia. Philadelphia: P. Blakiston's Son & Co. 1905.

Clinical Obstetrics. By Robert Jardine, M.D. Edin., M.R.C.S. Eng., F.F.P., & S. Glas., F.R.S. Edin. Second edition. Illustrated. London: Rebusan Limited. New York: Rebusan Company. 1905.

Bulletin of the Massachusetts Institute of Technology. Catalogue, December, 1905.

Lectures on Clinical Psychiatry. By Dr. Emil Kraepelin. Authorized translation from the second German edition. Revised and edited by Thomas Johnstone, M.D. Edin., M.R.C.P. Lond. Second edition. New York: William Wood & Co. 1906.

The Diagnosis of Tuberculosis of the Lung, with Special Reference to the Early Stages. By Dr. K. Turban. With an introduction by Sir Dyce Duckworth, M.D., LL.D., F.R.C.P. Translated by Herbert C. Morland, M.D., B. Sc. Lond. New York: William Wood & Co. 1906.

Clinical Sanitary Science. A Handbook for the Public Health Laboratory. By David Sommerville, B.A., M.D., D.P.H. (Camb.), M.R.C.P. (Lond.) Illustrated. New York: William Wood & Co. 1906.

Transactions of the Association of American Physicians. Twentieth Session, held at Washington, D. C., May 16 and 17, 1905.

Military Hygiene. By Robert Caldwell, F.R.C.S., D.P.H., Lieut.-Colonel Royal Army Medical Corps. Illustrated. New York: William Wood & Co. 1905.

University of California Publications. Physiology. Studies on the Toxicity of Sea-Water for Fresh-Water Animals (Gammarus pulex de Geer). By C. W. Wolfgang Ostwald.

On the Validity of Plüger's Law for the Galvanotropic Reactions of Paramecium. By Frank W. Bancroft.

Saunders' Question Compend. No. 7. Essentials of Materia Medica and Prescription Writing. Arranged in the form of Questions and Answers prepared especially for Students of Medicine. By Henry Morris, M.D. Seventh edition, thoroughly revised, by W. A. Bastedo, Ph.G., M.D. Philadelphia and London: W. B. Saunders & Co. 1905.

Blakiston's Quiz-Compend. A Compend of Medical Chemistry. Inorganic and organic, including urinary analysis. By Henry Leffmann, A.M., M.D. Fifth edition, revised. Philadelphia: P. Blakiston's Son & Co. 1905.

The Office Treatment of Diseases of the Rectum, with a Description of Some New Methods. By Charles B. Kelsey, M.D. Reprint.

Nervous and Mental Diseases. By Archibald Church, M.D., and Frederick Peterson, M.D. Fifth edition, thoroughly revised. Illustrated. Philadelphia and London: W. B. Saunders & Co. 1905.

Official Register of Harvard University. The Harvard University Catalogue. 1905-6.

Original Articles.

THE VALUE OF DRUGS IN THERAPEUTICS.*

BY FREDERICK C. SHATTUCK, M.D., BOSTON.

Jackson Professor of Clinical Medicine in Harvard University

I do not believe that King David meant to be taken in absolute seriousness when he classed all men alike as liars; nor do I believe that Dr. Holmes, had it come to the point, would have cast every drug into the deep.¹ Ten righteous men would have saved Sodom, than which the Pharmacopœia is less sinful in that most of its inhabitants are negative characters like Kipling's Tomlinson — neither fit for heaven nor ripe for hell. Even if the Pharmacopœia were as bad as Sodom it would be easily saved by a score or more agents which the world could ill spare. Moreover, who can foretell what chemistry is still to do for us?

Dr. Holmes's statement was made at a time when the only drugs in use were those pretty directly derived from the mineral or vegetable kingdoms. The rising sun of science had scarcely reached the valley of therapeutics, though the keen vision of Jacob Bigelow penetrated deep enough into the gloom to see that many diseases are self-limited, and curable rather through that which is in the patient than what we put into him. To-day new compounds are made and tested, compounds which, as far as we know, never existed before. The vast majority of them are of little or no value as remedies for disease, but some useful synthetic compounds have been discovered, and more will be discovered. Who can count the number of cases of typhoid which have originated through the urine of a previous patient? This is a danger against which urotropin, rightly used, seems to afford absolute protection. For the past eight years my typhoid patients have all had 7 to 10 gr. of urotropin three daily, two successive days of each week, until convalescence was complete. In no case has harm resulted. Were the practice universal there would be less typhoid, the prevalence of which among us is a reproach to our civilization.

Bigelow and Holmes were among the early protestants against the irrational and indiscriminate therapy which had ruled the medical world since the time of Galen. Here and there a Sydenham had risen above authority but was ahead of his time. To-day, thanks to a scientific spirit and saner methods, we believe food, sleep and fresh air to be the trinity of health, and that if we can regulate the lives of our patients we can largely dispense with drugs. It is true that we have a few specifics, as quinine for malarial fever, and, to a less degree, for amebic dysentery. We also have mercury and the robes for syphilis. The salivæ compounds, great as their control is over the articular manifestations and fever of what we call rheumatism, can scarcely be classed among the specifics until the evidence is clearer than it seems at present that they prevent or

control the heart involvement, so much more serious in its effects than the joint inflammation. Our knowledge of these agents, as of most of the other useful drugs to which I shall allude, is purely empirical. Diphtheria antitoxin and thyroid extract are not, properly speaking, drugs, though they are remedial agents of the first importance, and there is sharp contrast between their birth and that of quinine or mercury.

It may be broadly stated that drugs are in the main adjuvants only; that such beneficial effects as belong to them lie in their power to alleviate some untoward symptom like indigestion, insomnia, pain, which retards or prevents recovery. This is eminently true of those acute and chronic general infections, for which we have, as yet, no antidote, such as typhoid, pneumonia, the exanthemata and tuberculosis. In these the action of drugs at present known can be only indirect. All that we can do now is to put the patient under the most favorable conditions possible in order that we may help him to manufacture his own antidote. Many a case of acute infection especially, goes through our hands without getting any drug at all. If we use a drug it is purely symptomatically.

Take again diseases which, in our present ignorance, are incurable. Among these I shall speak only of cancer and pernicious anemia. In certain forms and in certain stages of cancer surgery may be curative. Drugs, opium especially, may here, judiciously used, promote comfort (no mean boon) and prolong life. That is all drugs can do. In pernicious anemia experience teaches me that the down follows the up wave sooner or later, neither wave nor interval being capable of influence for good through drugs unless, possibly, to a slight degree by arsenic. Injudicious medication may do the patient harm. The fundamental good which judicious medication can do is problematical.

Again, there are maladies more or less local in their character in the successful treatment of many cases of which drugs may be practically indispensable. Myocardial disease furnishes a good illustration. I feel as sure as I can of almost anything in medicine that there are cases where hygiene and every other therapeutic agent fails without digitalis. Twice in the past two years I have sent back to Nova Scotia a live and greatly improved cardiac patient whose doctor and friends expected him to return in a coffin. The determining factor was a fairly bold use of an efficient preparation of digitalis, a drug the occasional or continuous use of which may enable a person to lead a relatively active and useful life, perhaps for years. It may be regarded as practically curative, and when well directed we could all dispense with it.

There are, furthermore, a number of disorders which a skilled practitioner can so modify by drugs, which will often be taken while we give general advice which will be left unheeded, as to increase the efficiency of life and the joy of living. An illustration which comes readily to mind is what was called biliousness, now more generally

* Read at the meeting of the Boston Homœopathic Medical Society, March 1, 1906.

¹ See he is generally quoted. But he expressly excepts opium, a few specifics, wine and ether.

known as auto-intoxication, and the effect upon it of an efficient purge. Calomel is a favorite nowadays. It is interesting to recall that the indiscriminate and excessive use of calomel and blue mass in former times led to their practical abandonment. Calomel was used irrationally. It is now used rationally in the main.

In gastric indigestion our chief reliance must be on diet and mode of life. They alone will usually right the mischief. But time can often be saved and an irritable be converted into a complacent member of the household more quickly by an acid, an alkali, bismuth or some other well selected drug or combination of drugs. The bromides seem clearly to allay reflex excitability, and often thus are of use in dyspepsia, palpitation of the heart and genital disturbance, in so far as these are due mainly to faulty innervation based upon nothing worse than what we call functional disorder.

The temporary or occasional use of a bromide or of one of the other more modern hypnotics can greatly help nature by securing sleep; but we must never forget the danger of the use, or too constant use, of these remedies. Each new hypnotic which comes out is at first called harmless; but we have all seen addiction to chloral, paraldehyde, amylene hydrate, sulfonal and trional. Veronal has scarcely had time to show its hand. Prophecy is dangerous, but I do not believe that a drug will ever be found which will cause a really natural sleep and can thus be used day after day indefinitely with safety. Some of the modern coal tar antineuralgics when rightly used are potent for good; but unless their sale as headache powders and bracers over every drug counter and in every bar-room can be stopped I think, on the whole, the world would be better without them. They are not as innocent as they are believed to be, and in so far as are more dangerous than opium, care in the use of which is generally recognized as desirable. I have by no means exhausted the list of drugs which I believe in themselves to be really active and thus capable of rendering good service to diseased and ailing humanity; but I think I have said enough for my purpose, which is to sketch rather than to attempt a finished picture, however small.

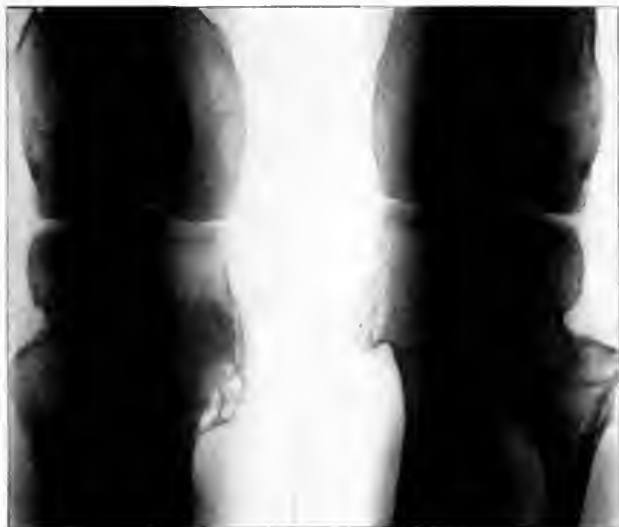
Therapeutic truth lies at the bottom of a very deep well, deeper than the medicine and food manufacturers who leave us samples realize themselves, or would like to have us realize. It is very easy for us to connect sequent events as cause and effect, though they may stand in no such relation to one another. Let us be on our guard, not only against our own credulity (and we are all infected more or less, either generally or locally, constantly or occasionally), but also against that of our patients. The power of suggestion may, nay, so very often does, play the leading part, whether we recognize the fact or not. When the good clergyman in the midst of his sermon said, "My friends, it is not so much the well from which we draw the water as it is the spirit with which we take it that counts,"

some of his congregation were amused. We may not altogether blame their levity, however firmly convinced we are of the truth of the statement. The same remedy in the same case at practically the same time may be of great service in the hands of one practitioner and fail utterly in the hands of another. To how many cases in which benefit has been and is attributed to drugs, do the words of Christ to the menorrhagic woman apply, "Thy faith hath made thee whole"? Mind cure, faith cure and Christian Science are simply new manifestations of the old, old human nature which is intolerant of the slow evolution of accurate knowledge, which must cling to something, and which thinks if it has a new name it has a new thing. As drugs in general have lost the pre-eminence in the treatment of disease which they once enjoyed, and as faith in old religious dogma has weakened, disease and the demand for its cure persisting all the time, faith, which also persists, seeks new channels. This need not disturb us at all, nor should it lead us to slacken our constant effort to think straight. Let us use suggestion as far as is necessary to subserve the best interests of our patients; but let us strive without ceasing to separate in our own minds mere suggestion from actual drug action. Few are capable of either imparting or receiving suggestion strong enough to prevent a hypodermic of apomorphia from producing active emesis, or zinc sulphate given by the mouth for that matter. But we have all seen cases in which the patient was relieved by a hypodermic of plain water which he—or she—believed to contain morphia.

I well remember, when interne at the Massachusetts General Hospital a third of a century ago a liniment introduced by a member of the staff who was of a skeptical turn of mind. It was a solution of common salt in water colored with some ink which had been bought by the hospital and which proved of poor quality for writing purposes. It was called *linimentum salis*, and more than one patient who had used it in the hospital came back for it after discharge, having found it useful and being unable to get it in any drug store. Rubbing is as useful as it ever was. To-day we call it massage. Some call it osteopathy. The element of suggestion enters more or less, I suppose, into the action of most applications to the seat of pain or disease. In recent years certain clay preparations mildly scented have attained much vogue. The thought of being smeared with such stuff adds a new terror to illness. Primitive people prefer medicines with taste and odor even if not agreeable. An Adirondack guide of mine replied, when I asked him how he liked some claret I gave him, "Well, I guess it's healthy." I have an impression that homeopathy has not made as much headway among the farming and laboring classes as among the more educated classes with a different kind of an imagination. The late Dr. T. B. Curtis remarked to me once that it is impossible to underrate the intelligence of the most intelligent classes in matters of physical

science. They do not know what constitutes growing knowledge, and most of

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Exostoses: Tibia and Fibula



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science. They do not know what constitutes evidence here or how to weigh it.

It seems to me that the leading therapeutic principles can be stated somewhat as follows:

First. Do no harm. This principle seems to be well met by the homoeopathist who uses the infinitesimal dose. He does no harm save in so far as he may miss doing good.

Second. Try to see as clearly as possible just why you give a drug, your purpose in giving it, whether as a specific, curative, palliative or as a placebo.

Third. As far as you can, give a drug uncombined. This is a general rule subject to many exceptions. Rules, however, are made to break. They are our servants, though we too often allow them to be our masters. But in breaking rules we must use our brains, an exercise which most of us avoid as far as we can.

Fourth. In using an efficient drug be as sure as you can of a good preparation, and then give it until something happens, — either the desired effect or evidence appears that the limit of toleration has been reached, what is called the physiological, but what I should prefer to call the toxic effect. Disregard of this law is, I believe, responsible for many therapeutic failures. Allow me to mention two remedies in this connection: Nitroglycerin is not to be thrown aside as useless until its dose has been pushed to the point of headache or flushing of the face without relief. In syphilis of the nervous system I share the belief of those whose experience in that line has been far greater than mine, that the dose of potassic iodide should be rapidly pushed, even once in a while, to 3 oz. a day. It is rarely necessary to go as high as this, but 1 to 4 dr. three times a day are not infrequently needed, unless I am more credulous than I think I am.

All that I have said may be summed up in the statement that our knowledge of drugs as therapeutic agents rests mainly on an empirical basis, and that in drawing conclusions we must be keenly alive to the manifold sources of error which encompass us on every side. Here judgment is indeed difficult.

I venture now to add a few words which I am sure you will take in the friendly spirit in which they are said. Why is the noun *curatives* not broad enough for any one? What is the reason to-day for any adjective? Scientific medicine is younger than homoeopathy, which is one of the forces that has led to the more rational use of drugs, in conjunction with the truly scientific spirit and with modern chemistry, which has separated the wheat from the chaff, and given us efficient agents, pleasing to the eye and inoffensive to the palate.

There is really no room in medicine for sects. There is less excuse for the *Odium Scientificum* than for the *Odium Theologicum*, in that scientific questions are more capable of demonstration. In matters of faith one man's opinion may be as good as another's — ay, be better for him. Not so in matters open to direct experimentation. It is mainly the imperfection of our constantly

growing knowledge, and, may I add, the frailty of our tempers and our narrowness of view which produce apparent discord. In essentials you and I agree, I think. As far as the selection of the drug and size of the dose go, unless my observation is woefully at fault, we are daily coming closer together. I frankly state, that in my opinion, homoeopathy has done its work. You and I are really separated in name rather than in fact, and, though I am no longer young, I hope and expect to see a single State Medical Society, comprising within its ranks the great majority of all well educated and honorable physicians, animated by the sole desire to advance knowledge, elevate the profession of medicine and serve the best interests of the community.

According to my thinking a grave mistake was made when the Massachusetts Medical Society years ago expelled reputable, well trained men whose only offense was that they used homoeopathic remedies homoeopathically. This mistake was made practically at the behest of the American Medical Association. Had the Massachusetts Medical Society simply stood pat it would have been justified by time as well as by its conscience. To-day the American Medical Association is more liberal; but the portal of entry into the American Medical Association is through the state societies, and a By-Law of the Massachusetts Medical Society prevents your joining it should you be so minded unless you sever your present affiliations and sign a statement that you do not "profess to cure disease by, nor intend to practice, spiritualism, homoeopathy, allopathy, Thomsonianism, eclecticism or any other irregular or exclusive system," etc. On spiritualism we need waste no words in this connection. Allopathy has never existed. Thomsonianism and eclecticism are dead.

Mine eyes hope to see the glory of the coming of the Lord. The true physician is simply seeking the truth as God gives him power to see it, and it is the truth which sets men free. Homoeopathy, in its early days especially, was too much dominated by its theories of selection and dosage. One result is a tendency to devote too exclusive attention to the study and nature of symptoms, too little attention to thorough physical examination, which, with proper methods and correct reasoning, lead to diagnosis.

Within ten years a lady who had been under the care of one of your leading members for three years, and who had obtained no relief for severe pruritus, consulted an eminent dermatologist, who referred her to me. Itching was due to chronic retention of bile which discolored the urine more profoundly than the skin or sclera, and which was due to biliary cirrhosis of the liver. Hanot's cirrhosis. The liver was very large, and the outlines of the lower edge could be felt with the greatest ease. The lady, who seemed a cool headed and credible person, assured me that her attendant had never examined her during the three years she had been going to his office. I do not know any member of the Massachusetts Medical Society who could hold a patient

three years under the same circumstances without examination.

Undue attention to the symptoms of disease has resulted in neglect of deep study into the nature of disease. If any really important contribution to the advance of medical science has come from a homeopathic physician I am ignorant of it, but am more than ready to learn.

Scientific medicine is open to the danger of going to the extreme of therapeutic nihilism, of disregarding the individual, of forgetting that, while our knowledge is imperfect and the big thing is to find out the true nature and cause of disease, the present day sufferer demands and has a right to demand all the aid that our knowledge, imperfect as it is, permits.

Peace and concord we enjoy. Let us, imbued with charity rather than prejudice, strive for unity.

THE HOMEOPATHIC PRINCIPLE.*

BY FREDERICK B. FERRY, M.D.,

Professor of Materia Medica, Boston University School of Medicine.

TRANSITION periods in medicine have always been epochal. Great men possessed of great and candid minds have in every age and generation struggled with the problem of drug influence in disease. System has followed system; theory, theory; all alike to disappear and be forgotten. From Hippocrates, the father of medicine, who said at the close of his life in speaking of disease, "Such are the causes, such the course, such the termination, alas, of all the diseases of my day; but if you ask me how to cure them then I must close my mouth; I did my best with the rough means at my disposal," down through the various schools of Aesclepiades, Galen, Paracelsus, Stahl, Sylvius, Boerhaave, Brown, Haller, and up to the time of Hahnemann, doubt and uncertainty prevailed as to the power of drugs. Some years before the promulgation of the law of similars Hahnemann thus voiced his opinion of the practice of medicine: "A number of causes — I dare not count them up — have for centuries been dragging down the dignity of that divine science of practical medicine, and have converted it into a miserable grabbing for bread, a mere cloaking of symptoms, a degrading prescription trade, a very God-forgotten handiwork, so that the real physicians are hopelessly jumbled together with a heap of befrilled medicine mongers. How seldom it is possible for a straight-forward man by means of his great knowledge of the sciences, and by his talents to raise himself above the crowd of mediocasters, and to throw such a pure, bright sheen upon the healing art at whose altar he ministers that it becomes impossible even for the common herd to mistake a glorious, benign evening star for a mere vapory sky-fall. How seldom is such a phenomenon seen, and hence how difficult it is to obtain for a purified science of medicine a renewal of her musty letters of nobility." Who was this man Hahnemann? Let me quote

from a contemporary and one opposed to his convictions in medicine: "No careful observer of his actions, or candid reader of his writings, can hesitate for a moment to admit that he was a very extraordinary man — one whose name will descend to posterity as the exclusive excogitator and founder of an original system of medicine, as ingenious as many that preceded it, and destined, probably, to be the remote, if not the immediate, cause of more important fundamental changes in the practice of the healing art than have resulted from any promulgated since the days of Galen himself. Hahnemann was undoubtedly a man of genius and a scholar; a man of indefatigable industry, of undaunted energy. In the history of medicine his name will appear in the same list with those of the greatest systematists and theorists; unsurpassed by few in the originality and ingenuity of his views, superior to most in having substantiated and carried out his doctrines into actual and most extensive practice." What thought this wonderful man of the value of medicine in the days preceding the birth of the law of similars? It was because of serious illness in his own family when, uncertain as to the methods to be employed for their relief, he thus expressed himself: "Eight years of scrupulously careful practice have shown me the nothingness of ordinary curative means; my sad experience has taught me but too well what may be expected from the advice of the greatest men. However, it is, perhaps, in the very nature of medicine, as many great men have already said, to be unable to arrive to a very high degree of certainty." In the middle of the last century Sir John Forbes thus wrote: "The same truth, as to the uncertainty of practical medicine generally, and the utter insufficiency of the ordinary evidence to establish the efficacy of many of our remedies, as was stated above, has almost always been attained to by philosophical physicians of experience in the course of long practice, and has resulted, in general, in a mild, tentative, or expectant mode of practice in their old age, whatever may have been the vigorous or heroic doings of their youth. Who among us, in fact, of any considerable experience, and who has thought somewhat as well as prescribed, but is ready to admit that, — in a large proportion of the cases he treats, whether his practice, in individual instances, be directed by precept and example, by theory, by observation, by experiment, by habit, by accident, or by whatsoever principle of action, — he has no positive proof, or rather no proof whatever, often indeed very little probability, that the remedies administered by him exert any beneficial influence over the disease? We often may hope, and frequently believe, and sometimes feel confident, that we do good, even in this class of cases; but the honest, philosophical thinker, the experienced, scientific observer, will hesitate, even in the best cases, ere he commit himself by the positive assertion, that the good done has been done by him. When physicians of this stamp have met in consultation in any doubtful case, and when they have chanced

* Read at the meeting of the Boston Homeopathic Medical Society, March 1, 1906.

to be startled out of their conventionalities by the bold doubt, or bolder query, of some frank brother of the craft, has not the confession, like the confidence, been mutual?"

It was, then, following these years of skepticism and after years of careful, painstaking experiment, that Samuel Hahnemann gave to the world his principle of *similia similibus curentur*; and through all the years which have passed his followers have shown no abatement of their enthusiasm in their faith in this law of cure. You may, if you like, attribute to others priority in the thought of first ascertaining the effects of drugs on the human body before using them in disease, yet as Rutherford Russell has well said: "The inductive philosophy of Bacon and Hahnemann and the application of its truths were necessary to the establishment of this law." What is it to believe in a law and practice it? "To believe or not to believe in a philosophical point of view, and apart from the theological acceptance of the term, signifies to give or withhold one's approval after having fully and seriously examined every new idea that bears the stamp of truth."

To practice it presupposes a thorough knowledge of the subject and a careful following out of its principles. What, briefly, are the essentials of the law of cure, for such we deem it to be?

First. That every drug should be thoroughly tested upon the healthy human body, and that facts thus elicited shall be supplemented by further experiments upon animals, and also by the results of poisoning when that is possible.

Second. That the conditions thus occasioned are those which when present in diseased states will be cured by these same drugs.

Third. That the dose to accomplish this must be sufficiently minute to occasion no aggravation of the symptoms present.

What are the advantages to be gained from using drugs in this way?

(1) Simplicity in form and administration, the single remedy its natural corollary.

(2) Precision.

(3) It assists nature, does not thwart or check her, and thereby fulfils that most important essential of all cures.

You may naturally ask what is the basis of its action, and I can do no better than to quote from a recent article by Dr. Villechaux: "To explain homeopathic cures Hahnemann evolved a certain number of theories. At first he considered that the organism was much more sensitive to drug-action than to disease, that drug-action was absolute; disease-action but relative. Then he concluded, that to induce a cure a slight aggravation was essential. Later he argued that the drug-disease was substituted for the natural disease and in turn vanquished by the reactive powers of the organism. This is the 'substitution method,' borrowed by Tronseau from Hahnemann. These theories lack solid scientific foundation, and Hahnemann finally said that the law being an established fact, its explanation

was of lesser moment. However, when this law shall be scientifically explained, homeopathy will become omnipotent in medicine and the most prejudiced mind will be forced to accept it."

I have purposely ignored certain features of homeopathy as not germane to the subject. That homeopathy is capable of curing *tuto cito et jucunde* is to us perfectly self-evident, but to the seeker after truth this is a thing to be proven. As a recent editorial rightly has said: "Drug giving may or may not be a permanent factor in the art of medicine; that is an open question; we who are homeopathic specialists believe, and with the soundest reason, that it is a factor far yet from being outworn. Be that as it may, we repeat, drug giving is not synonymous with the art of medicine. It may rise or fall; the art of medicine only declines when the physician's means of healing the sick decline in number or in power. Has this been the case in the last twenty years? Is there anyone who would seriously make a claim so instantly refutable? We need cite but a few shining instances in disproof. What of diphtheria, fatal, twenty years ago, in from 10% to 60% of the cases attacked, to-day treated in hundreds of consecutive cases without a death? What of tuberculosis, whose mortality, in the city of Boston alone, has been reduced 50% in the last quarter century? What of the once incurable headache, now easily diagnosed as due to eye-strain, and as easily cured? What of the innumerable hay fevers, reflex coughs, and their kin, disappearing promptly after removal of nasal growths and hypertrophies? What of the regaining of lost nervous balance, under the various forms of rest cure? What of the once lethal cyclone of 'peritonitis' cases, to-day recognized and relieved as appendicitis? What of the vastly more intelligent treatment of anemia, possible on the knowledge obtainable by the 'laboratory student' of to-day as to whether the case be one of chlorosis, leukemia, or primary or secondary anemia? We surely need not multiply proof. Even superficial study of that already adduced must convince any impartial investigator that the art of healing—the important true synonym of the art of medicine—is not declining, but progressing—and that, with beneficent speed."

Let us admit from the beginning that in the cure of the sick many influences must be considered:

- (a) Natural history of morbid processes.
- (b) The recuperative energies of the organism.
- (c) The favorable agencies of hygiene.
- (d) The power of personal magnetism in the practitioner.
- (e) Suggestion and a patient's suggestion.
- (f) Faith.
- (g) Courage.
- (h) Drugs.

Here then is the problem which faces every far-minded man, to apportion to each of these influences its due weight. It is not strange that there have been differences of opinion, no two cases are alike as no two individuals are alike,

and it does seem as though in certain carefully well selected cases we should possess definite information as to how much or how little drugs are factors. It would not be difficult in functional diseases to determine this factor; but in self-limited diseases the problem is a different one. Homeopathy has won its successes in the treatment of epidemic disorders, and we point with pride to those statistics so long ago offered by Fleischman in the successful treatment of pneumonia. The time has come and is not far distant when such tests of the remedial power of homeopathic drugs as shall silence all doubt will be made. It is the truth that we seek; self-deception must not longer rule us, and suffering humanity will be the gainer. The weakness of homeopathy lies in the crude and imperfect application of its principles, and in that most important defect, lack of entire faith in its adaptability. Polypharmacy in the minds of most of the new school is an anachronism, a thing not to be tolerated; and yet with us it is even now a menacing evil. This, gentlemen, is not homeopathy, give it some other name if you wish to adopt it; but leave to us the single remedy and the approval of an honest mind. As Dr. Elbridge C. Price has well said: "Do not forget, however, that since the days when Hahnemann wrote his 'Organon,' the world has progressed, arts have become more vital and effective, and the ever-multiplying branches of science have evolved into varied systems of learning of which the sages of the eighteenth century could have no conception. Do not forget that it is quite possible for many of the unessentials which have grown up beside the vital law, to be proven to be without foundation in fact, and that it is unHahnemannian in men of to-day to refuse to recognize the demonstrable facts of science. And finally, do not forget that nothing ever yet has modified in the slightest the truth of that eternal verity, the law of similars, and, to judge from the sublime verdict of the ages, nothing ever will. Its roots dip deep beneath the dust of remotest antiquity, and its branches reach out into the empyrean of coming time, bearing its leaves to all the ends of the earth for the healing of all the unborn nations of all futurity."

AN INEXPENSIVE MECHANICAL TREATMENT FOR ANTERIOR METATARSALGIA.

BY ERNEST BOYEN YOUNG, M.D., BOSTON.

Second Assistant Visiting Physician for Diseases of Women, Boston City Hospital; Assistant in Gynecology, Harvard Medical School.

ORTHOPEDIC surgery and gynecology would seem, at first glance, to be almost too widely separated in their scope to have any interdependence; but there is a class of cases, coming, as a rule, to the specialist in diseases of women, in which pain is referred to the pelvis, lower back and hips, for which pelvic examination shows no adequate cause. Poor muscular development and improper shoes have seemed to be very often at the bottom of these difficulties. As a conse-

quence, faulty methods of standing and walking, induced by the attempt to gain relief, have usually been manifest.

Some of these have been entirely relieved by suitable shoes and education as to the proper methods of standing; and others by muscular exercises of various kinds. Among those with indefinite pains about the pelvis have been a number suffering from lowering of the anterior transverse arch of the foot.

In experimenting to convince myself that the pains were not of pelvic origin, the discomforts due to the breaking down of the transverse arch have been relieved by such simple devices; that it seems worth while to publish them, in order that others may have the benefit; if they prove as satisfactory in their hands, as in my own.

The inside sole and plate are both somewhat costly, and often necessitate the purchase of larger shoes, in order that they may be worn with comfort. The method adopted in my own cases does away with these drawbacks, and will be found acceptable to many of moderate means.

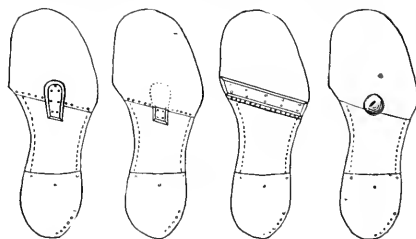


Fig I Fig II Fig III Fig IV
Diagram of different methods of applying support.

A piece of sole leather of the thickness required is cut into the shape indicated in the illustration (Fig. 1). The edges are beveled, and the leather is touched on one side with a few drops of liquid glue. It is then placed on the sole of the boot, to which it adheres, in about the required position, *i. e.*, so that its pressure is exerted just behind the heads of the metatarsal bones. The situation in which it gives relief is marked with pencil, and the leather nailed in position by a shoemaker. It can also be inserted under the sole (Fig. 2), by raising the posterior edge of the sole and nailing it again in place.

If there is too much pressure, the leather is pared to the requisite thickness, as indicated by the comfort of the wearer.

The increased depth, at the point where the leather is inserted, raises the sole over this area and slightly beyond, whenever the patient steps — this in turn supporting the anterior arch.

Experiments have also been made with the leather and rubber buttons (Fig. 4) which are manufactured for use upon the bottoms of chair legs. While they answer the purpose when screwed to the bottom of the shoe, they are not so firm, and distributing the pressure over a smaller area, are less comfortable than the leather

tongue. However, they will be found useful occasionally, as they can be fitted in the office by the same methods as the leather tongue, and fixed in place immediately upon any thick-soled shoe. It is always necessary to shorten the screws somewhat, in order not to perforate the bottom of the boot. It is also possible to pare them down after they are in position, until the pressure exerted is acceptable to the patient. Still another means of accomplishing the same result, and one which is especially applicable to shoes which are to withstand severe wear, is shown in Fig. 3. The leather strip raises all the metacarpals slightly, and, at the same time, by varying the angle at which it is placed on the shoe, it may be made to aid in raising the inner side of a pronated foot. In mild cases this works exceedingly well. The proper slant and thickness are adjusted to the comfort of the patients as they stand upon the leather strip. Naturally, suitable exercises should be carried out in every case.

Suffering from metatarsalgia I have tested these different methods upon myself, with relief, and, therefore, feel that I can recommend them from personal experience. They are not advocated for all types; but it is possible by these means to give relief to many at a moderate cost, who would find the purchase of new shoes, plates and pads a strain upon their small financial resources.

Boston City Hospital.

CLINICAL MEETING, JAN. 11, 1906.

Dr. HENRY JACKSON, chairman; Dr. L. R. G. CRANDON, secretary.

DISLOCATION OF SHOULDER WITH CONTUSION OF BRACHIAL PLEXUS

By L. R. G. CRANDON, M.D.

A MAN of fifty-four years fell sideways to the ground, striking on his right elbow. He came to the hospital complaining of the usual disability of shoulder dislocation, together with numbness of the hand and fingers.

Examination showed a subcoracoid dislocation of the right shoulder with paresis and numbness of right hand.

The shoulder was easily reduced by the Kocher method at the first attempt. The evidence of nerve injury continued, namely, wrist drop, entire loss of all finger motions, anesthesia over the whole "glove" area, and partial anesthesia over front and back of forearm and of anterior aspect of arm.

Diagnosis: Contusion of part of brachial plexus.

At the end of one month, having received electricity and massage, condition is considerably improved, but the power of the hand is far from being normal.

This case has great medico-legal value, in my opinion, since if a careful physical examination at the time of entrance had not been made it might have been concluded, to the detriment of the operator, that the manipulations of reduction had caused the nerve injury.

FIBROIDS AND PREGNANCY, EXTRA- AND INTRA-UTERINE PREGNANCY

By ERNEST B. YOUNG, M.D.

I. A case in which delivery by version, on account of eclampsia, was obstructed by multiple fibroids. The mother recovered, although there was some disturbance of the circulation of the tumors, and the premature child survived.

II. Specimens from a case of coincident extra- and intra-uterine pregnancy. The extra-uterine pregnancy ruptured and patient was operated upon for relief of hemorrhage. Pregnancy advanced to about the sixth week.

A TUMOR OF THE KIDNEY SHOWN BY MICROSCOPIC EXAMINATION TO BE HYPERNEPHROMA

By J. C. HERRARD, M.D.

W. G., male, fifty-six years old; married.

Family History.—Father died of old age at eighty-four. Mother at fifty-five from some injury to her side. Two sisters at about thirty-five who had both been sick about two years. One sister and three brothers alive and well.

Previous history.—Patient, when young was not considered healthy but was always, nevertheless, able to do hard work. Has had no sickness of any consequence or venereal disease. For a period previous to nine years ago was at intervals a hard drinker.

Present illness.—Two years ago last April was seized with a sudden pain in right side severe enough to double him up. The attack was followed immediately by blood in the urine. From this time has had attacks of bloody urine at intervals. At first every four or five weeks but steadily growing more frequent. Sometimes they were accompanied by pain sometimes not. At first the blood lasted for a day or two. With the succeeding attacks it lasted longer and longer, a week at a time. Has had at times difficulty in passing urine from clogging of the urethra with blood clots. There has been no expedient loss of weight noticed. Feels somewhat weaker than usual.

Physical examination.—Well developed and nourished man. Radial artery somewhat hard but the pulse tension not high. An enlarged lymph gland in right axilla, otherwise no increase in the size of the superficial glands. Chest negative. Liver dullness extended from the fourth space in the mammary line to two fingers' breadth below the rib margin. Its edge was plainly palpable, not irregular. Spleen and left kidney not palpable. Hemoglobin 90%. In the region of the right kidney there was a firm, evenly rounded tumor, moving with respiration independently of the liver. Feels similar to the kidney in shape but larger. Not tender. No other tumor masses felt in the abdomen.

Urine passed immediately after the examination was almost pure blood. That examined several days later was as follows: Acid, color normal, 1018 albumin large trace to 1-10%, sugar absent. Microscopic examination of the sediment: Much blood, normal or only slightly abnormal, few leucocytes, many round cells slightly larger than leucocytes, many with several nuclei of fat drops, no crystals or casts.

Operation.—Lith.

Patient was placed on left side on pillow. The incision ran from the outer part of the twelfth rib parallel to the spine down to the crest of the ilium. The peritoneal fat, which was of small amount, was opened, and the kidney freed with the hand. There were a number of adhesions which were broken by the hand. The hemorrhage was very free but it never

became alarming. The ureter was divided between clamps and its end touched with carbolic acid and alcohol. Several of the more firm adhesions, one of which it seemed on the chances should contain the vessels, were divided between clamps. The vessels were, however, not seen. After the tumor was entirely free it was so large that the incision had to be enlarged along the crest of the ilium before it could be delivered. Only after careful search on the tumor were the ends of the divided vessels found. There was practically no bleeding from the wound in the loin from which the tumor had come, although the renal vessels had not been tied or clamped. After searching here and comparing the position of the divided vessels on the tumor with the place where they should be in the wound a small vein was found which was ligated. Nothing was found to correspond to the renal artery. The wound was closed in layers leaving a small gauze wick to the bottom of the cavity.

By afternoon of the same day the dressings had soaked through and were changed. The gauze wick was removed after twenty-four hours and provisional stitches tied. The convalescence was uneventful and the patient was out of bed on the sixteenth day, the wound having healed by first intention.

The tumor weighed 2 lb. and on microscopic examination was found to be a hypernephroma. At one end of the tumor there was some kidney tissue and it was to this portion that the greatly atrophied vessels went.

PROSTATIC HYPERTROPHY, PERINEAL PROSTATECTOMY. RECOVERY. IMMEDIATE RESULT CURE.

BY F. S. WATSON, M.D.

This patient is shown principally to illustrate two things, the first being the admirable result of an operation rendered grave by virtue of the patient's previous condition, and the other being the necessity which the surgeon labors under, of being forced by the circumstances of the patient's and his surroundings to perform a radical operation in spite of its being contra-indicated from the surgical point of view. With respect to the latter, the patient's conditions of life, his lack of intelligence, and unsteadiness of hand made it impossible for the man to employ a catheter treatment without involving greater danger to life, though, perhaps, not such immediate danger than was, I believed, to be encountered by subjecting him to the removal of his prostate, which gland was the source of his suffering and played a large part in promoting the steady decline of his health. The event has justified that opinion.

With respect to the nature of the surgical contra-indications, they were as follows: Marked senile debility; the patient was so weak that he tottered as he walked, and a heart which suggested that it was very liable to stop at any time under the influence of but a slight cause of any kind. The pulse was weak and intermittent, and became very irregular whenever he sat up in bed, and the heart sounds were very feeble. He had also a chronic bronchitis and lungs which invited post-operative complications, which is one of the four most frequent causes of death in connection with operations requiring anesthesia. The single encouraging feature was the fact that the urine was clear and showed no evidence of serious functional disability of the kidneys.

In connection with this case I would call attention once more to the fact which is very difficult

to impress upon the profession, viz., that operative treatment of prostatic hypertrophy is less dangerous than the catheter treatment, if only we can apply it before the patients have been made septic by the catheter or their kidneys injured by long delay in applying the surgical remedy.

The relief afforded to this patient whose sufferings were severe and increasing has been complete. He has entire control of the bladder. The urine is clear and there is but one half an ounce of residual urine. In short, the immediate result of the operation is cure in the strictest sense of the word. It is very rare that we find in our experience of these operations, that the patient, who obtains such a successful result as this one has done at the beginning, fails to maintain the same excellence of condition thereafter.

PYOPNEUMO-THORAX. OPERATION, OPENING INTO THE PLEURAL CAVITY THROUGH AN INTERCOSTAL SPACE, DONE TO AVERT IMMINENT DANGER ARISING FROM INCREASINGLY GREAT PRESSURE OF AIR WITHIN THE PLEURAL CAVITY UPON THE HEART, AND THE SERIOUS DISPLACEMENT OF THE LATTER ORGAN THEREBY, AND FOR THE RELIEF OF DISTRESSING DYSPNEA FROM WHICH THE PATIENT WAS SUFFERING. IMMEDIATE RELIEF OF THE LATTER SYMPTOM AND DANGER AVERTED FROM THE CONDITION PER SE.

This patient is shown in order to illustrate the benefit that may be gained from the above operation in these most distressing conditions. And to serve as an example demonstrating the ability to gain this relief by surgical intervention, contrary to the established tradition and practice in these cases. The operation is one that it is just as rational, it seems to me, to perform for the purpose of allowing the escape of intra-thoracic pressure from air as is that of opening the chest wall for the purpose of relieving the same pressure when it is due to collection of fluid.

GENERAL PURULENT PERITONITIS WITHOUT OBVIOUS CAUSE; SECONDARY ENTEROSTOMY.

BY DAVID D. SCANNELL, M.D.

From the service of Dr. H. W. Cushing. Female, aged twenty; six days before entrance, general abdominal pain associated with chill, nausea, vomiting and constipation; gradual localization of most acute pain in right lower quadrant; more or less continual vomiting, fever and complete cessation of bowel movements for three days prior to admission. On entrance, facies was strongly suggestive of general peritonitis. Temperature, 102; pulse, 136; of fair volume and tension. Abdomen, slightly distended, with dullness in flanks, general involuntary spasm with tenderness most marked over appendix region. Vaginal examination, negative. Operation by Dr. Monks: Right rectus incision; immediate escape of large amount of highly turbid fluid, coming from all parts of the general cavity; appendix injected, but apparently not the cause of the peritonitis; careful examination of the other common sources of peritonitis, viz., tubes, perforated gut or stomach, gall bladder, etc., failed to show the cause. Abdomen washed out with many quarts of salt solution and drained. After this operation progressive

change for the worse with incessant and exhausting vomiting of greenish watery fluid; complete stoppage of bowels, marked abdominal distension, producing embarrassed respiration, rising and occasionally intermittent pulse and marked restlessness. The patient seemed to be going the way of most cases of general peritonitis in the adult. Fifty-two hours after the first operation, an enterostomy was done by Dr. Scannell under 1% cocaine anesthesia, the incision being made in the median line just below the umbilicus; light adhesions were everywhere present; these were easily broken up by the finger and the force of the irrigating fluid; a loop of ileum was then brought up. Practically nothing was given by mouth for five days; bowels moved by enemata and calomel on the third day and after; practically no post-operative nausea or vomiting; no distension.

(Case shown at meeting fourteen days after operation.)

GENERAL PURULENT PERITONITIS WITHOUT OBVIOUS CAUSE.

BY DAVID D. McANNEEL, M.D.

From the service of Dr. W. P. Bolles. Female, aged seventeen. Negative past history; twenty-four hours before admission, acute general abdominal pain associated with nausea, vomiting and constipation; gradual localization in right lower quadrant. At entrance relevant physical examination was as follows: Pulse, 100; of good volume and tension; temperature, 101; facies not peritonitic; tongue coated; abdomen not distended; moderate general involuntary spasm, most marked in lower half of abdomen and especially in right lower quadrant; no epigastric spasm; tenderness marked in area corresponding to spasm, with most acute pain over McBurney's point. Graham incision over appendix area; immediate escape of fairly thick pus; no adhesions; appendix practically normal except for deep injection of serosa, removed, however; intestines everywhere distended; peritoneum throughout deeply injected, and more or less irregularly covered with plaques of thick fibrin; careful exploration of small gut from ileo-cecal valve up to the beginning of the jejunum, this being facilitated by a second median incision from above the umbilicus down to pubes; gut at no point collapsed, or showing evidence of ulcerative enteric conditions; pelvic organs, normal; stomach contained a small amount of fluid with no obvious point of perforation, kidneys normal to palpation. The patient's condition not justifying further search, the general cavity was washed out with twelve to fourteen quarts of salt solution, with careful sponging of ileum (which showed the most evidence of peritoneal injection) in particular. Median incision closed, and wicks placed in pelvic, subcostal, umbilical and subhepatic regions through the appendix wound; sutured to the abdominal wall, and immediately opened; escape of large amount of gas and greenish watery feces, the patient was turned on the side and the inside of the gut in both directions was washed out with salt solution. At the conclusion of this procedure, the patient's condition was certainly no worse than before. Subsequently, the fecal discharge through the enterostomy became profuse, the distension gradually went down, relieving the respiration, the vomiting ceased and there was a return of the pulse and temperature to the normal, in five days practically all danger was past. During these five days the patient was given, once daily, sub-mucous injections of one quart of 1:50,000 adrenalin chloride in salt solution, always with marked benefit. The enterostomy closed spontaneously about one month.

(Case shown ten months after operation.)

LACERATED WOUND OF FOOT; GAS BACILLUS INFECTION.

SERVICE of Dr. W. P. Bolles, M.D. Male, aged forty-five; laborer; two weeks before entrance, patient sustained severe crush as to left foot in cogs of donkey-engine. On admission to Relief Station, patient presented an extensively lacerated wound, extending transversely across the entire dorsum of left foot at the metatarsophalangeal level, through the extensor tendons, and accompanied by fractures of the second, third and fourth metatarsals near their heads, the little toe being completely crushed. Under ether, parts thoroughly cleaned; little toe amputated; wound loosely sutured, after reduction of metatarsal fractures. Twenty-four hours later, local evidence of infection by bacillus aerogenes capsulatus; crepitation in soft parts; rapid sloughing of tissues; slightly foul odor to discharge; cultures taken at this time showed the presence of the gas bacillus; temperature and pulse both slightly elevated; almost no constitutional reaction; local swelling confined to dorsum of foot; no lymphangitis nor inguino-femoral lymphoditis. Treatment consisted in chlorinated soda soaks and dressings. On fourth day normal pulse and temperature, and disappearance of crepitation.

(Case shown two weeks after injury.)

ADENOCARCINOMA OF THE SIGMOID FLEXURE.

BY E. B. RICE, M.D.

Mrs. M. C., forty-two years old, and the mother of twelve children, was seen on Sept. 6, 1901. She had had severe constipation about three months, and had not had a satisfactory movement during that time. For two weeks before I saw her she had had no movement of the bowels. Her abdomen was abnormally distended, but she was otherwise in good general condition. Vaginal and rectal examination negative. She was taken to the Boothby Hospital on Sept. 8. A median incision showed enormous distension of both large and small intestines. There was an annular carcinoma of the sigmoid flexure, which was brought outside the abdomen through the lower angle of the median laparotomy wound, the wound being sewed together above it and the intestine and mesentery sutured so as to form a spur. An incision was made in the intestine just above the stricture, and an enormous amount of feces allowed to escape. It was found on opening the abdomen that the sigmoid was twisted around itself, forming a volvulus, which accounted for the complete obstruction which had existed for two weeks previous. A large glass tube was tied in the opening in the large intestine and attached to a bottle at the side of the bed. There was a profuse discharge of feces through the tube, which was left in two days. Mrs. Connor made a good convalescence, but it was complicated by a phlebitis. Her pulse remained rather poor, and it was thought wiser to amputate the carcinoma and apply guarded clamps to cut through the partition between the adjacent loops of intestine rather than to do a formal intestinal resection. This operation was done about three weeks after the primary operation, under local anesthesia. The first application of the clamps did not make a large enough opening, and a second subsequent application had to be made. The patient left the hospital in about two weeks after the first operation, still having a free intestinal opening, although a large part of the feces came through the phlebotomy. When she was in the hospital she had two gastrostomies, as the tubes were clogged with feces, after separating the intestines from these adhesions to the abdominal wall. These attempts were successful.

In December, 1903, she reported that she was in good general condition; had gained in weight, strength and color; still had some swelling of the feet, and a good portion of the feces came through the fistula.

During the winter of 1903-04 the fistula closed. When seen by the writer in the fall of 1904 she had gained about forty pounds, was in excellent health and doing her housework.

During the summer of 1905 the fistula reopened, and the partition grew up so that all the feces came out upon the abdominal wall. There was also a recurrence of the tumor, in the skin of the abdominal wall so that the fistulous opening was surrounded by an area of thick, rough tumor tissue. She was in good general condition, and it was evidently necessary to get rid of the tumor and, at the same time, close the fistula; therefore, on Dec. 28, the fistula and the tumor were encircled by an elliptical incision, the peritoneal cavity opened, the sigmoid flexure with the tumor drawn out, and the mass resected. There was hardly any recurrence of the tumor in the intestine, but it was practically confined to the skin around the opening. The mesentery was quite thick and well provided with blood vessels. The intestine was united by end-to-end sutures after the method of Connell, and the abdomen closed without drainage. Mrs. Connors had made an excellent recovery, and now you can see that the skin of the abdominal wall is healthy, and the bowels are moving the right way without difficulty.

The case is of interest on account of the employment of the clamp method to restore the continuity of the intestinal canal at the time the patient was too weak to stand a formal resection. She was in good health and fairly comfortable for two years after the removal of the tumor and the application of the clamps; then, when recurrence having taken place, resection became imperative, she was in good condition to bear the operation. She is now in good health, and if we may judge by the way the tumor has acted previously, will probably be free from recurrence for a long time. Of interest also in this case is the fact that recurrence took place in the skin of the abdominal wall.

Adenocarcinoma is not to be compared in malignancy with the ordinary carcinoma of the intestine and it is fortunate that we occasionally meet these cases which are so much more encouraging than the everyday cases of intestinal carcinoma.

Dr. Lund also showed a specimen of SARCOMA OF THE FEMUR for which hip joint amputation had been performed, the iliac artery having been controlled by digital pressure through an abdominal incision. The tumor had resulted in a spontaneous fracture of the bone. In connection with this was shown a drawing of a specimen removed at autopsy from a case of spontaneous fracture of the femur in an old woman. The specimen showed a fracture resulting from an invasion of the femur by carcinoma secondary to carcinoma of the breast.

GOULT.

BY GEORGE B. SHATTUCK, M. D.

F. N., teamster, forty-nine years old; widower.

Family history: Maternal grandmother has had attacks of rheumatism distorting the hands. Mother

has had rheumatic attacks in one finger. Brother has had attacks similar to those of patient in hands. No tophi.

Past history: Gonorrhea in 1878; several attacks since. Chancroid in 1897. More or less steadily alcoholic, occasionally to excess. First attack of present complaint was twelve years ago, when metatarsophalangeal joint of great toe became affected, red, hot, swollen and tender. Had several attacks from 1894 until 1898, since which time there are fourteen records of entry in the hospital. Patient places number of attacks at from twenty-five to thirty-five. At first entry there is mention of "opaque, pin-head size swellings on both ears." No further record of tophi until 1903, when the diagnosis of gout was made.

Present illness: Has had two attacks in 1905, the first beginning Nov. 28, when the joints involved were the tarso-metatarsal of right foot and the right wrist and left ankle. The second attack began Dec. 25. Joints involved in the acute process were the terminal joints of left little and right forefinger. According to records, joints which have suffered most have been the second and third joints of all fingers except thumbs, the right wrist and the second joint of the left great toe. Practically all joints, except hips, have been affected at one time or another in a poly-articular process. Patient states that tophi on the ears grow to size of rice grains, the skin over them becomes abraded and he picks them off. He never has had any discharge from toes or fingers.

Physical examination: There is slight radial sclerosis. Heart is negative. Aortic second slightly accentuated. Small urethral fistula exists beneath the glans near the corona.

Fingers: Terminal joints of all fingers on both hands show limited motion with atrophy of tissue around joints: some swelling of joints (terminal) of third right and little fingers. Second joints of left hand show like process with fusiform swellings on second and third fingers. Thumbs exempt. Toes: Ankylosis of second joint of great toe over which the skin is smooth. Wrist: Right somewhat thickened. No crepitus in any finger made out.

X-ray plates show left hand second joints, middle, ring and little fingers, with loss of joint surface; loss of bone on proximal phalanges; second joint of thumb similar; right, fusion of bones of carpus.

Feet: Destruction of joint surface of terminal joints two great toes.

Urine: Volumetric analyses, Jan. 14, 1906, no symptoms.

Amount in twenty-four hours, 2,420 cc.; acid; specific gravity, 1.0085; indoxyl sedim.; albumin, S. P. T.; sugar, 0; bile, 0; total solids, 47.31 gr.; urea, 15%, 27.225 gr.; uric acid, 0.2134 g.; chlorine, 6.84 gr.; phosphates (as P_2O_5), 1.089 gr.

Jan. 15, 1906. Amount in twenty-four hours, 2,560 cc.; specific gravity, 1.009; alkaline; albumin, S. P. T.; Indoxyl, diminished; sugar, 0; bile, 0; total solids, 52.99 gr.; ureas, 13%, 28.8 gr.; uric acid, 0.0752 gr.; chlorine, 6.29; phosphates (as P_2O_5), 1.72 gr.

Treatment: Patient has responded to ordinary anti-rheumatic treatment. During 1903 was given wine of colchicum also with salicylates.

Up to 1897 there are only eleven cases of gout catalogued in the medical index of this hospital. The interest lies largely in the differential diagnosis, and especially from arthritis deformans.

Dr. E. A. Loeke showed some admirable x-ray photographs of gouty and rheumatic conditions borrowed from Dr. R. B. Osgood.

EXOSTOSES.

BY GEORGE B. BRATTICE, M.D.

J. C., thirty-five years old; single, laborer.

Negative family history. Past history: Rheumatic fever in 1895, which kept patient in bed three months. Gonorrhea ten or twelve years ago; no connection with rheumatic attack made out; no specific history; four loaves, two whiskies and six cups of coffee daily.

Present illness: Admitted with acute articular rheumatism affecting both knees, both ankles and right shoulder, which showed tenderness, but no heat or swelling. Responded readily to ordinary rheumatic treatment. Patient states that condition of what he calls "double joints" has always been present.

Physical examination: Shows bone peculiarities as follows: Large exostosis over left internal tuberosity of tibia; enlargement of head of left fibula; enlargement of both left malleoli; exostosis size of walnut on left antero-internal aspect of femur two inches above the knee; smaller exostosis on outer aspect at same level; right tibia, large exostosis of internal tuberosity; large exostosis in popliteal space; external condyle of femur shows small tuberosity; spur on the right humerus three quarters of an inch long on anterior surface at lower edge of pectoralis major; large exostosis of crest of ilium on the left; old fracture of the right ulna.

Diagnosis. Multiple osteo-chondromata of developmental origin, arising from epiphyseal line.

Medical Progress.

PROGRESS IN PATHOLOGY.

BY JOSEPH H. BRATTICE, M.D., BOSTON.

(Continued from p. 321, No. 12.)

RECENT ADVANCES IN THE BACTERIOLOGY OF TYPHOID FEVER.

As has been stated, Grunberg and Rodly found in 45% of their cases of undoubted typhoid fever a higher agglutination-titer with the paratyphoid bacillus than with the causative micro-organism, the typhoid bacillus. Korte and Steinberg² point out that the results obtained by Grunberg and Rodly are not in accord with those of many investigators. In Stern's clinic no case of typhoid fever has been observed in which paratyphoid bacilli were agglutinated with more highly diluted serum than the typhoid bacillus. They regard the results of Grunberg and Rodly as faulty, and the result of imperfect technique. They assert that for the differential diagnosis between typhoid and paratyphoid, the microscope and not the macroscopic method of performing the Widal test should be employed. With the microscopic method only can the upper limit of agglutinability be accurately determined.

BLOOD-CULTURES IN TYPHOID FEVER.

Coleman and Buxton³ collected 1041 cases of typhoid fever in which blood cultures had been made. The bacillus was isolated in 453, or 75% of the cases. During the first week cultures were made in 85 cases, with positive results in 79, or 93%. In one case reported by Raschger

the bacillus was isolated from the blood on the third day of the disease. Busquet isolated the bacillus in every one of the 83 cases he examined. His success is attributed to the fact that he placed in flasks, each containing 300 cc. of bouillon, only a few drops of blood.

Zupnik⁴ states that typhoid serum in some rare cases agglutinates paratyphoid bacilli A and B in the same or higher dilutions than it agglutinates the typhoid bacillus itself. He asserts that the two paratyphoids, on the other hand, never produce sera which have the power of agglutinating typhoid bacilli in as high dilution as it does the homologous race. Hence, a serum that agglutinates, in equal dilution, all three of the species under consideration or two of them must be a typhoid serum.

Duffy⁵ made cultures from the blood in 88 cases of typhoid fever. The blood of 71 cases was examined in the second week of the disease, and found to contain the typhoid bacillus in pure culture in every instance. In 18 cases the diagnosis was made by blood cultures before the Gruber-Widal test was positive. Bacillus fecalis alkaligenes was found in the cultures made late in the disease in a number of cases. The statement that staphylococcus albus was found in the blood must be viewed with suspicion, inasmuch as that organism is a normal inhabitant of the epidermis, as Dr. Welch showed many years ago.

PARATYPHOID INFECTIONS.

von Krehl⁶ recently reported a case of sausage poisoning due to Bacillus paratyphosus B. Several hours after eating the sausages, diarrhea with colic developed. Severe headache, fever and malaise followed. Moderately high remittent fever persisted for eighteen days. The abdomen was distended; the spleen enlarged and readily palpable. There was no leucocytosis. Rose spots did not appear. The urine contained in the beginning of the illness albumin, numerous granular casts and a large amount of indican. From the stools an abundant growth of paratyphoid bacilli of the type B was obtained. At first, the agglutination test of the blood was negative. On the eleventh day of the disease it agglutinated Bacillus paratyphosus B in the dilution of 1:1000. Professor von Krehl attributed the severe symptoms at onset to toxins contained in the sausages. It is possible that the toxins were produced by Bacillus paratyphosus B. This supposition is particularly interesting because it is opposed to the theory of some investigators who do not ascribe to the typhoid bacillus any toxogenic properties.

Calhoun⁷ records seven cases of paratyphus infection due to sausage poisoning, that occurred in the same family and at the same time as the single case studied by von Krehl. In all, the onset was sudden, the fever rapidly increased, there were diarrhea and vomiting, the pulse was

¹ *Med. and Surg.*, 1903, 16, p. 283.² *Proceedings of the New York Pathological Society*, 1904, p. 10.³ *Deutsche med. Woch.*, 1905, xxx, p. 1749.⁴ *Journal of the American Medical Association*, 1905, xiv, p. 1558.⁵ *Deutsche med. Woch.*, Feb. 22, 1906, p. 326.⁶ *Ibid.*, p. 327.

remarkably accelerated. The temperature fell to normal after three days. Twenty-four hours after the onset the spleen was plainly palpable in four cases. The most interesting clinical feature was the appearance of typical roseole in one of the cases. *Bacillus paratyphosus B* was isolated from the stools of every case.

Kayser¹⁵ made a bacteriological investigation of the same paratyphoid house epidemic. The agglutination test with *Bacillus paratyphosus B* was positive in a dilution of 1:1000 in all the cases. Blood cultures were negative. A bacteriological examination of the sausages was made but no paratyphoid bacilli were found.

Lembke¹⁶ observed in Sobernheim and vicinity four cases of paratyphoid fever. Further investigation revealed paratyphoid infection in nine individuals who felt slightly ill for only a few days. The clinical picture in most of the cases resembled influenza rather than typhoid fever. One patient died on the forty-sixth day of the disease from intestinal hemorrhage. The sanitary condition of the village was very bad. It was thought that the disease was spread through contamination of the water in the gutters of the streets, and that the bacilli were brought into the houses on the shoes of the inhabitants.

Schottelius¹⁷ studied an epidemic of paratyphoid B infection which occurred in Freiburg. In ten cases in which the causative organism was isolated from the patients he made agglutination experiments. The microscopic method was employed. In all the cases the maximum agglutination was obtained with the causative micro-organism. In several cases the sera agglutinated B typhosus in a dilution of 1:100 but in one instance in a dilution of 1:1000.

A young man, ill with fever and severe diarrhea, was given an infusion of salt solution in the thigh. At the site of the injection an abscess developed. From the pus Kraneuhl¹⁸ isolated a bacillus which belonged to the hog cholera group. Although it formed acid in milk it was agglutinated by *B. paratyphosus B* serum, dilution 1:38200. The patient's blood agglutinated the paratyphoid bacillus B, dilution 1:640.

Marchoux¹⁹ states that typhoid fever, as it exists in temperate countries, is very rare in Brazil. Paratyphoid infections are common and are usually mild.

A much smaller number of cases of infection with *Bacillus paratyphosus* has been reported than with the other variety of paratyphoid bacillus. So that the recording of an additional case by Kayser²⁰ is of interest: The organism was isolated from the blood and urine. A second case was observed in which the diagnosis could not be made with certainty as all attempts to isolate it were futile, and the diagnosis was

based on the agglutination test alone. The serum agglutinated *B. paratyphosus A* 1:100. The test with type B and the typhoid bacillus was negative.

In the fall of 1905, an epidemic of typhoid fever due to paratyphoid bacillus A occurred in France. The attention of French physicians was called to this by the investigation of Netter and Ribadeau-Dumas.²¹ The clinical picture suggested to Netter the possibility of paratyphoid fever and the diagnosis of paratyphoid infection was made by the agglutination test in 43 out of 58 typhoidal cases. The symptomatology in 18 of the cases differed from that of typhoid fever. Thirty-two of the cases were regarded as instances of infection with *B. paratyphosus A*. Tarehetti²² believes that Eberth's bacillus is simply the colon bacillus attenuated in the human body. By growing a typical colon bacillus in the peritoneal cavity of rabbits he claims to have converted it into a paratyphoid bacillus.

RELATION OF JAUNDICE TO THE AGGLUTINATION REACTION.

Blumenthal²³ does not believe there is any connection between the Widal reaction and icterus. If a serum in high dilution agglutinates Eberth's bacillus it is safe to conclude there is an infection either with *B. typhosus* or a closely related micro-organism. The frequent infection of the biliary passages with the typhoid bacillus explains the apparent association of jaundice and the agglutination test. The bile was examined at the time of operation in 17 cases of cholelithiasis. In 4 cases, no micro-organisms were found. The typhoid bacillus was isolated from 4 cases, and the paratyphoid bacillus type A from one. In 4 of the 5 cases a history of typhoid fever could not be obtained. The blood serum of the cases in which *B. typhosus* or *B. paratyphosus* was not found did not yield a positive agglutination test in a single instance.

Forster and Kayser²⁴ examined bacteriologically the contents of the gall bladder at 148 autopsies. Only 8 had died of typhoid fever. In 2 of the non-typhoidal cases micro-organisms of the typhoid group were found,—in one case *B. typhosus*, in the other *B. paratyphosus B*. The intestinal contents were examined bacteriologically at autopsy in seven cases of typhoid fever. Drigalski-Conradi and Endo agar plates were used. The number of typhoid bacilli was greatest in the upper part of the small intestine and diminished regularly from above downwards.

Netter et Ribadeau-Dumas²⁵ state that in 10 out of 32 cases of infection with the paratyphoid bacillus type A there was pronounced icterus. In 9 other cases the skin was slightly jaundiced.

TYPHOID BACTERIOLYSINS.

Friedberger and Moreschi²⁶ have studied the racial differences of the typhoid bacillus. A

¹⁵ Deutsche med. Woch., Feb. 22, 1906, p. 326.

¹⁶ Zeit-schr. f. Medizinalh., 1905, p. 234.

¹⁷ Abstracted in Cent. f. Bakt., Erste Abt., Referate, Feb. 15, 1906, p. 726.

¹⁸ Münch. med. Woch., Oct. 31, 1905, li, p. 2116.

¹⁹ Ibid., July 11, 1905, p. 1331.

²⁰ Revista Med. Cir. do Brazil, 1905, xiii, No. 1.

²¹ Abstracted in the Journal of the American Medical Association, 1905, xlv, p. 206.

²² Zent. f. Bakt. Orig., 1905, xl, p. 285.

²³ Compt. rend. Soc. de biol., lix, pp. 373, 433.

²⁴ Clinica Medica italiana, 1904.

²⁵ Abstracted in Semaine Médicale, 1905, xxvi, p. 68.

²⁶ Medizinische Klinik, No. 48, Nov. 5, 1905.

²⁷ Münch. med. Woch., No. 31, Ang. 1, 1905, p. 1474.

²⁸ Compt. rend. Soc. de biol., lix, 1905, p. 426.

²⁹ Berliner klinische Wochenschrift, 1905, xlii, Nov. 6, p. 1409.

race named Sprung was carefully compared with another strain Giessen. The former was unusually virulent. Even after cultivation for a year upon agar alone it had a constant virulence of 1:20 oese. Culturally and morphologically, it had the typical characteristics of the typhoid bacillus. It was not, however, agglutinated by some typhoid sera of high potency. The agglutinin-absorption experiment as employed by Wassermann was likewise negative, and it could not be identified as a typhoid strain by Pfeiffer's bacteriolytic test. The active immunization of rabbits yielded a positive result. The serum of the immunized animal acquired the property of agglutinating typical typhoid bacilli in high dilutions. It agglutinated the homologous strain Sprung and the heterologous strain Giessen in equally high dilution. The serum had a high bacteriolytic power for Giessen but contained practically no Sprung bacteriolysis. The writers concluded from their study that the conception of Ehrlich and Morgenroth in regard to the receptors must be modified. The observations of Friedberger and Moreschi show that bacteria have two separate groups of receptors. One group forms anti-bodies, the other unites with anti-bodies. By the injection into rabbits of either one of the two strains of typhoid bacilli agglutinins for both strains were produced. These agglutinins are not identical; they differ according to the nature of the race used in producing them. For example, the Sprung agglutinin produced by injecting Giessen is different from the Sprung agglutinin produced by injecting the strain Sprung. Corresponding to the different agglutinins the two bacterial strains have different uniting and forming groups, "*bindende und bildende Gruppen*." The race Giessen had forming and uniting groups for both Giessen and Sprung, while Sprung had forming and uniting groups for Sprung, but for Giessen only forming groups. Hence, although Sprung had no uniting groups for a Giessen lysin it formed in rabbits large amounts of a bacteriolysin for Giessen. The more marked the loss in uniting groups the more difficult is bacteriolysis, and the greater is the virulence. The maximum virulence would be reached in bacterial races that had lost entirely the uniting groups. Whether such a strain of the typhoid bacillus exists is not known. Its specificity could be shown, as it was with Sprung, by its power of producing active immunity against typhoid infection. This it would do by means of its uniting groups. The practical importance of this work is evident. The serum to be used in immunizing men against typhoid fever must be in a high degree active against "*serum test*" races such as type Sprung. Preventive inoculations carried out among soldiers in South Africa by the Pfeiffer-Kolle method were generally successful. They failed in some cases in spite of active immunization against typhoid fever. It is not improbable, as the authors suggest, that these individuals became infected with a strain similar to Sprung, which had few

uniting groups, and those only for the bacteriolysins of the homologous strain.

Besserer and Jaffé²⁷ have discovered strains of typhoid bacilli that are resistant to the action of a bactericidal serum. With these bacilli Pfeiffer's experiment was negative. Strains with this singular characteristic were isolated from the stools of "typhoid-bacillus bearers." This term is applied to individuals whose stools for months or years after recovery from typhoid fever contain the causative micro-organism.

The agglutination tests and cultural properties were those of the typhoid bacillus. It was possible to immunize animals with these organisms against typical strains of typhoid bacilli. The resistance of the races studied is explained by a change in their receptor-apparatus brought about by long residence in the intestines.

Hahn²⁸ under the direction of Stern studied the bactericidal action of human blood serum against the typhoid bacillus. The cases investigated included healthy individuals and those ill with diseases other than typhoid fever. The test tube bactericidal method devised by Stern and Korte was employed. For this test only a small amount of serum is necessary. The article contains a detailed description of the technique. One hundred individuals were examined. In 77% of the cases the bactericidal titer was below 100. In the remainder of the cases he was able to demonstrate some bactericidal power against the typhoid bacillus. The bactericidal action compared with that of typhoid serum was relatively slight. In the non-typhoid cases there was no relation between the height of the bactericidal titer and any definite disease.

Korte and Steinberg²⁹ in the same clinic and employing the same method as Hahn, investigated the bactericidal action of the blood serum of typhoid patients. In 58% of the cases the bactericidal titer was above 100,000, and in only 3% was it below 1,000. In some cases it was above 1,000,000, in two instances 4,000,000. The bactericidal power sinks during convalescence, and after recovery from the disease it is usually low. No relation could be shown between the height of the bactericidal titer and the severity of the infection. Relapses occurred in patients whose blood was strongly bactericidal. The agglutination reaction and the bactericidal reaction are wholly independent. The diagnostic value of the bactericidal reaction is analogous to that of the agglutination test. The higher the bactericidal titer the greater the probability that the infection is due to the typhoid bacillus. As the bactericidal reaction requires greater technical skill and an expenditure of more time than the agglutination test its use in diagnosis will be largely limited to those cases in which the Gruber-Widal test is either negative or doubtful.

Landshammer³⁰ demonstrated the bactericidal properties in 8 out of 12 cases of typhoid fever.

²⁷ *Deutsche med. Woch.*, 1904, No. 51, p. 2034.

²⁸ *Deutsche Arch. für klin. Med.*, 1905, xxxv, p. 293.

²⁹ *Ibid.*, p. 321.

³⁰ *Zeitsch. für klin. Med.*, 1905, lxxi, p. 170.

In 3 cases specific bacteriylins for paratyphoid bacillus B were present, and in each of these paratyphoid bacilli were cultivated from the stool. The serum of one patient from whose blood typhoid bacilli were cultivated was in a high degree bactericidal for paratyphoid bacillus A and only slightly bactericidal for the typhoid bacillus. The bactericidal test makes such demands upon material and time that its practical value, even in hospitals, will be very slight.

A NEW SERUM TEST IN TYPHOID FEVER.

Appiani³¹ has devised a new method of serodiagnosis in typhoid fever, which he regards as more reliable and simpler than the agglutination reaction. It is based upon the precipitating action of typhoid serum upon ground-typhoid bacilli. Several cubic cc. of serum from the suspected case are needed for the test.

THE TECHNIQUE OF THE AGGLUTINATION TEST.

Kapka³² has published from Příbram's clinic in Prague a comparative and critical study of the various methods of performing the agglutination test. The literature has been carefully studied. Most of the methods advocated by different investigators have been tested. The recently discovered fact that clinical typhoid fever may be due to a number of different micro-organisms has renewed interest in the quantitative Gruber-Widal test. In order to make a bacteriological diagnosis it is now necessary to determine the highest agglutination-titer of a whole group of organisms.

METHODS OF DIFFERENTIATING THE TYPHOID BACILLUS AND ALLIED MICRO-ORGANISMS.

Sacquépée and Chevreil³³ found that the salts of various metals added to media produced color reactions which serve to distinguish the typhoid and paratyphoid bacilli.

The Genoa Institute of Hygiene has been testing the v. Drigalski-Conradi method of isolating typhoid bacilli from stools. As a result of this investigation Monti³⁴ states that by this method, even when supplemented by the agglutination test other micro-organisms may be mistaken for typhoid bacilli. On the other hand, negative findings with the v. Drigalski-Conradi test do not positively indicate the absence of typhoid bacilli.

Trapani³⁵ found that after typhoid bacilli were kept for forty-eight hours in tubes containing glycerin, that they lost their power of proliferation, while the growth of the colon and pseudo-typhoid bacilli is not checked by this procedure. Based upon this action of glycerin he has devised a method of differentiating B. typhosus.

Endo³⁶ has introduced a new method for demonstrating typhoid bacilli in the feces. The preparation of the medium is less complicated than that of v. Drigalski-Conradi, and Endo claims it gives equally good results. The essential ingredients of the medium are lactose, fuchsin, and sodium sulphide. These are added to a 3% agar. The colonies of colon bacillus are red, while the typhoid colonies are colorless.

According to Ficker and Hoffmann³⁷ caffeine checks the development of the colon bacillus but does not interfere with the growth of the typhoid bacillus. For the examination of stools 105 cc. of 1.2% caffeine solution were mixed with 100 cc. of bouillon and 1.4 cc. of 0.1% crystal violet solution added. This solution was inoculated with 0.8-0.9 cc. of a suspension of the stool or the stool itself if of thin consistence. After thirteen hours in the incubator v. Drigalski-Conradi plates were inoculated.

Ruata³⁸ has tested Endo's method of differentiating Eberth's bacillus from the colon bacillus and finds that it is not trustworthy. Sometimes both micro-organisms colored the medium red and sometimes both failed to change the color.

Lentz and Tietz³⁹ found that malachite green in a concentration of 1:6000 added to an ordinary 2% agar prevented the development of colon bacilli, while the typhoid bacilli grew luxuriantly. The bacilli grown on this medium were not readily agglutinated. For this reason transplantations were made to v. Drigalski-Conradi plates. The advantage over other differentiating media lies in the fact that typhoid bacilli can be isolated when present in very small number. From a stool containing typhoid bacilli inoculations were made. Only four typhoid colonies developed on the v. Drigalski-Conradi plates, while on the malachite green medium a large number of typhoid colonies appeared.

Klinger⁴⁰ examined the stools of typhoid patients for the typhoid bacillus during the febrile period by three different methods. v. Drigalski-Conradi plates gave a positive result in 35%, Endo's fuchsin plates 55%; malachite green 68%.

Nowack⁴¹ recommends the use of a malachite green medium in cultivating typhoid bacilli from the stools. He found one part of malachite green No. 120 to 2,000 or 2,500 of medium the best for practical purposes. Endo's agar also proved to be a serviceable medium.

After years of experimentation Loeffler⁴² has devised a satisfactory medium for isolating typhoid bacilli from feces, soil and water. Comparative tests have shown its superiority over the v. Drigalski-Conradi agar. The essential ingredient of the new medium is malachite green which checks the growth of colon bacilli without interfering with the typhoid bacillus. Malachite green No. 120 is made by the Höchst Dye Works.

³¹ Gazzetta degli Ospedali, xxvi, No. 103.

³² Abstracted in the Journal of the American Medical Association, 1905, xiv, p. 1699.

³³ Cent. f. Bakt., Erste, Abt., Orig., 1905, xl, p. 247.

³⁴ Semaine Médicale, 1905, xxvi, p. 572.

³⁵ Archivio per le Scienze Mediche, Turin, 1905, xxxix, No. 1, Abstracted in the Journal of the American Medical Association, 1905, xiv, p. 1972.

³⁶ Gazzetta degli Ospedali, 1905, xxvi, No. 58.

³⁷ Abstracted in the Journal of the American Medical Association, 1905, p. 501.

³⁸ Cent. f. Bakt., Abt. 1, Originale, 1904, xxxv, p. 109.

³⁹ Arch. f. Hygiene, xlix, 1904, p. 229.

⁴⁰ Cent. f. Bakt., I, Abt., Orig., 1904, xxxvi, p. 576.

⁴¹ Münch. med. Woch., 1903, l, p. 2139.

⁴² Inaug. Diss. Strasburg, 1901. Cited by Brion and Kayser,

Deutsches Archiv. f. klin. Med., 1906, lxxxv, p. 537.

⁴³ Archiv. f. Hygiene, 1905, liii, p. 374.

⁴⁴ Deutsche med. Woch., 1906, Feb. 22, p. 289.

An infusion is prepared by placing four pounds of chopped beef in five liters of water; 750 gm. (15%) of gelatin, and 50 gm. (1%) of Witte's peptone, and 5 gm. (1%) of sodium chloride are added. The whole mixture is slowly heated until the gelatin is completely dissolved, and is then boiled for forty-five minutes. While hot, it is made neutral to litmus with sodium carbonate. After boiling again, it is filtered. A clear golden-yellow gelatin is thus obtained. To every hundred cc. of this medium add three cc. of a double normal phosphoric acid solution, and two cc. of a 2% malachite green solution. A drop of the material to be examined, for example, a typhoid stool, is placed in each of two tubes containing about 20 cc. of this medium. The gelatin should be melted before the inoculation is made. From one of the tubes plate cultures should be made; the second should be placed in the incubator for twelve hours. A series of tubes containing the green gelatin should be inoculated and poured into Petri plates, which should be kept at a temperature of 45° C. Other subcultures may be made from the original tube at the end of eighteen and twenty-four hours. The typhoid colonies appear on the green gelatin plates as bright gray, granular, round or oval colonies, the size of a pin's head. Frequently small projections appear on the surface, giving a characteristic appearance. The colonies are easy to identify.

ISOLATION OF TYPHOID BACILLI FROM DRINKING WATER.

In the spring of 1904, typhoid fever developed in Prague, and within a few days spread over the city. v. Jaksch and Ran² examined the city drinking water for typhoid bacilli, using the method of Hoffmann and Ficker. In three different places typical typhoid micro-organisms were isolated. Six tests were made and three (50%) yielded a positive result.

ISOLATION OF TYPHOID BACILLI FROM MILK.

It is generally known that water is the most frequent source of typhoid infection. Scheller³ has collected statistics from six hundred and thirty-eight typhoid epidemics. In 77% of the cases the infection was conveyed by water. Milk stands in the second place and is responsible for the disease in 17% of the cases. Konrad⁴ investigated the recent epidemic, and succeeded twice in isolating the typhoid bacillus from milk. This observation is of importance because in no previous epidemic has the presence of the typhoid bacillus in the milk been proved, although it is known that many typhoid epidemics originated from an infected milk supply.

Hoffmann⁵ found that typhoid bacilli would live two months in an aquarium. They survived four weeks in the water and eight weeks in the mud which covered the bottom of the bank.

Paladino-Blandini⁶ has isolated bacillus paratyphosus A from water. The action of the typhoid, paratyphoid and colon bacilli was tested on a number of sugars. Inulin was fermented by the paratyphoid bacillus B and the colon bacillus. It was not acted upon by paratyphoid bacillus A or the typhoid bacillus.

THE RELATION OF BACILLUS FAECALIS ALKALIGENES TO TYPHOID FEVER.

Doebert's⁷ investigation seems to show that there is a close relation existing between the typhoid bacillus and *Bacillus faecalis alkaligenes* of Petruschky. He obtained from Petruschky a culture of *Bacillus faecalis alkaligenes*. This organism rendered litmus milk blue in twenty-four hours. A pellicle formed on the surface of the milk. On potato, in twenty-four hours, it produced a yellowish brown growth. This micro-organism had an agglutination titer of 1:800 with typhoid serum. By passing the bacillus through three guinea pigs it acquired all the cultural properties of the true typhoid bacillus. Its growth on potato was now colorless and in twenty-four hours it produced slight reddening of litmus milk. The micro-organism cultivated from the third guinea pig was not agglutinated by the alkaligenes serum 1:100. Typhoid serum agglutinated it in the dilution of 1:15,000. Doebert studied another race of *Bacillus faecalis alkaligenes* which belonged evidently to another group. This bacillus could not be converted into *Bacillus typhosus* by passage through animals. It preserved its own cultural and agglutinative properties.

Altschuler⁸ studied a case with the clinical picture of typhoid fever and from the blood of which *B. typhosus* was isolated in pure culture. The agglutination tests with *B. typhosus* and with the paratyphoid bacillus, type A, were positive in dilutions of 1:250. At the autopsy the typical lesions of typhoid fever were found. Cultures from the spleen yielded a pure growth of *B. faecalis alkaligenes*. Apparently cultures were not made from other organs. A series of experiments convinced the writer that the so-called *B. faecalis alkaligenes* is really a typhoid bacillus that forms alkali in milk instead of the initial production of acid. Typical typhoid bacilli after growing six weeks on bits of human placenta lost their power of agglutination, formed alkali in milk, and produced a yellow growth on potato. In old cultures of *B. faecalis alkaligenes* the micro-organisms were found to have acquired the cultural properties of true typhoid bacilli. They now produced a slight amount of acid in milk, and the growth on potato was colorless. He frequently found *B. faecalis alkaligenes* in the stools of typhoid patients, and once isolated it from the blood. In the feces of seventy healthy persons it was present only once. Thirty strains of typhoid bacilli that had been isolated from the stools of typhoid patients were collected and their action on litmus milk noted. All

¹Cent. f. Bakt., I. Abt., Orig. Bd., XXXV, p. 284.

²Cent. f. Bakt., 1905, vol. xl, p. 31.

³Archiv f. Hygiene, 1905, lu, p. 208.

⁴Annale d'Hygiene, Sperimentale, 1905, cv, p. 159.

⁵Arch. f. Hygiene, 1905, lu, p. 70.

⁶Munch. med. Wch., 1903, No. 29, p. 585.

redness the milk during the first two days. Five formed alkali after the third day. The remainder were still acid at the end of three weeks. Agglutination tests and Pfeiffer's experiment proved that the alkali producing races were true typhoid bacilli.

The growth of the typhoid bacillus and *Bacillus faecalis alkaligenes* upon 3.3% urine-gelatin inclines Piorkowski⁴⁹ to the view that they are different organisms although closely related.

RELATION OF BACTERIUM FLAVO SEPTICUM TO TYPHOID FEVER.

Brion and Kayser⁵⁰ in a description of the nosological position of the symptom-complex typhoid fever show clearly that under this term are embraced a group of infections due to different organisms. These different diseases cannot be distinguished clinically. They report a case in which the clinical picture corresponded completely to that of a mild typhoid. There was moderate fever, apathy, palpable spleen, ictericuria, leucopenia. From the blood a bacillus was cultivated, which was agglutinated by the patient's serum in a dilution of 1:500. The organism differed markedly from the typhoid bacillus. It liquefied gelatine, and formed yellow colonies. *Bacterium flavo septicum* is the name given to this hitherto undescribed micro-organism.

THE VALUE OF FICKER'S DIAGNOSTIC.

Klemens⁵¹ compared Ficker's typhoid and paratyphoid suspensions with living cultures in testing the power of agglutination. If the time of observation was extended to eighteen hours the results with Ficker's diagnostic fluids was found to be as trustworthy as with living cultures.

THE NATURE OF THE AGGLUTINATION PHENOMENON.

At the time of the discovery of the agglutination reaction by Gruber and Durham it was thought that the clumping of the bacteria was due to the change in the bacterial membrane by which it became sticky so the bacteria adhered one to another. Dineur suggested that the flagella became entangled; Pfeiffer and Kolle held that there was a paralysis of the motile organisms. Recently Zangger and Pauli have studied the phenomena of suspension and their relation to agglutination. Porges⁵² in the Paltauf Sero-therapeutic Institute has made an experimental investigation which supports the theory that there is a relation between the agglutination reaction and the suspension of colloid. They held that the precipitation of a bacterial ingredient is the cause of the bacterial clumping.

Iverson⁵³ has studied the variations in the agglutination phenomenon during the course of typhoid fever in a large series of cases. Every few days he determined in each case the maxi-

mum dilution at which agglutination occurred. In mild infections the agglutination curve rises slowly. At the end of the febrile period or at the beginning of convalescence there is a sharp rise followed by a rapid fall. In the cases in which relapses occurred, the agglutination reaction frequently failed to develop until after the onset of the relapse. The agglutination titer was always higher during the relapse than during the original attack. In some individuals the blood loses its agglutinative power during convalescence; in others it is found to be present after many years. Iverson obtained in one instance a reaction in a dilution of 1:100, ten years after an attack of typhoid fever. Ambulatory cases exhibit chiefly a low atypical agglutination curve.

Reports of Societies.

BOSTON HOMEOPATHIC MEDICAL SOCIETY.

STATED MEETING, THURSDAY, MARCH 1, 1906.

DR. FREDERICK C. SHATTUCK and DR. FREDERICK B. PERCY read papers on

THE VALUE OF DRUGS IN THERAPEUTICS.¹

DISCUSSION.

DR. WALTER WESSELHOEFT: I can only say that I have listened with the greatest interest and closest attention to both the speakers, and I wish especially to thank the first speaker for coming here. I look upon it as a kindness. He comes here to instruct us, to offer us peace and harmony. He has hardly uttered a word with which I do not agree fully. There is but one point upon which I venture to differ, that he excludes from his consideration an infinite number of observations (I will not as yet call them facts), observations which have been placed together and seen to possess one uniting feature, in that a reaction takes place in certain pathological conditions and processes on the administration of certain remedies possessing the peculiar features of the disease itself. These, I say, are observations, observations that are countless to-day and at the same time are only recognized as correct by those who closely pursue them, those who attempt to bring them about and those who attempt to observe them. To those who have been in the habit of observing these reactions they have come to have the aspect of being governed by what we call a law, a law that has its distinct limitations, but is, nevertheless, a law.

The existence of such a law has been practically ignored on the one hand; on the other, it has been seized upon and extended, its phenomena reproduced, under countless varying circumstances, with results that have strengthened the conviction of the existence of these observations as scientific facts. As I said, on the one hand these have been rejected; on the other hand they have been applied in practice.

The lapse of time has tended more and more to separate these two views concerning the existence of what we may call the curative power of drugs, and notwithstanding that there is unquestionably an affiliation or an approach in general practice between these two divergent tendencies, there is yet this wide division of view that can never be reconciled so long as we do not deliberately set about testing these facts under the most rigid, the most scientific and equitable conditions. Otherwise there is no possibility of reaching

⁴⁹ Cent. f. Bakt., 1906, xl, Hft. 4.

Abstracted in Deutsche med. Woch., March 8, 1906, p. 395.

⁵⁰ Deutsch. Arch. f. Klin. Med., 1906, lxxv, p. 552.

⁵¹ Berl. klin. Woch., 1905, xlii, p. 1249.

⁵² Cent. f. Bakt. Orig., 1905, vol. xl, p. 143.

⁵³ Zeitschr. f. Hygiene, 1905, xlii, p. 114.

¹ See pages 333 and 336.

any conclusion. We may discuss these things late and early, we may hold to our convictions, and yet, at the same time, we shall never come to an agreement unless we positively abandon all the old facts and deliberately set about to create new ones, and those new ones under rules that shall be recognized as scientific by the entire profession, and that shall govern a method of observation open to every doubter, every believer. I hold that we on the believing side, that of homeopathy, should conduct these observations.

It rests with us to make good our beliefs. I trust the time is not far distant when such observations shall be undertaken and shall lead to positive results.

DR. PACKARD: Mr. President, you have certainly made a mistake in calling upon an obscure surgeon to discuss such a subject. What can I know about drug action? I deal with things more material. I want to say, however, that I would like to extend the right hand of fellowship to Dr. Shattuck. He has spoken words which have sunk very deep in my heart. I would like to move to make him an honorary member of this society.

I am sure that many members of this society would welcome most heartily the breaking down of the barrier that has so long existed preventing affiliation with our colleagues of what is called the "old school." We are all specialists; knowledge of our homeopathic materia medica and the practice of homeopathy is a specialty. We also include within our ranks all of the general specialties in medicine. I think I may safely say that all of our members who are specialists of the latter class would welcome the breaking down of the obnoxious barriers which have so long kept us apart.

Now, a word about Dr. Shattuck's subject, "Drugs and Their Action." Of course I cannot shut my eyes to the fact that sick people want to be treated. They do, and we must recognize that oftentimes the drug has a potent influence psychologically upon the patient, irrespective of what it may do otherwise. Still, now and then impressive things occur. I suppose I do not meet them to any such extent as my colleagues in general practice, but they come to my attention now and then, tributary to my surgical work. I do not know how any one can help marvelling at the influence of sulphide of calcium upon suppuration. I think that it is a remedy which has been somewhat widely adopted by the old school. Another impressive thing is the stimulating effect of fluorine acid upon wounds which have become, as we say, inactive, that is, granulations do not readily and rapidly spring up to effect repair.

I might give you fifty illustrations of this kind as examples of what drugs homeopathically prescribed will do for various complications following surgical operations.

DR. RICE: I wish first to express my personal thanks to Dr. Shattuck for coming here to-night. I wish also to call to the minds of some of you that twenty years ago, at a meeting, I think, of this society, Dr. H. C. Bowditch appeared and gave a talk on drug therapeutics. He was answered by Dr. Conrad Wesselschoff. I remember Dr. Bowditch said a great deal about drug compounds, about the increased efficacy of drugs when combined, and he mentioned a good many compounds consisting of three, four, five and six different drugs.

I noticed to-night that Dr. Shattuck has said little about the drug compounds, but has expressed his belief in the administration of the single remedy when possible. This, I presume, is an evidence of progress. We think so. I believe that the time is fast approaching when we shall be together, when our friends on the other side will believe that there is much in the

efficacy of drugs when given according to the law of similars, and when we shall more universally believe that there is a great deal in serum therapy and in the other remedies which Dr. Shattuck has mentioned here to-night. When this bond of union has been firmly established we can easily put aside the minor considerations and form one vast organization for the support of all that is true and enduring.

DR. J. HERBERT MOORE: Dr. Shattuck has certainly presented this subject of "The Value of Drugs in Therapeutics" in a very refreshing manner, from the physiological standpoint, considering the wave of skepticism and even nihilism, concerning the efficacy of drugs in the treatment of disease, which was spread over the older school of medicine during the past few years.

It seems to me that between the positions taken on the one side by Dr. Shattuck and on the other side by Dr. Percy, lies the line of demarcation or distinction as regards the value of drugs in disease, and differentiating the therapeutic practice characterizing the two schools of medicine. On the one side, that presented by Dr. Shattuck, is the physiological action (used for the want of a better term) of the drug, constituting the more palliative action; and on the other side, presented by Dr. Percy, the specific or curative action of the drug prescribed in accordance with the homeopathic principle of therapeutics.

Those of us who consider homeopathy in the light of an addendum to general medicine, and not a subtraction, acknowledge the efficacy of drugs in producing their physiological results when prescribed for this purpose, and advocate this use of physiological therapeutics whenever it is indicated. In order that you may not accept this statement merely as a personal opinion let us note the opinion of this phase of the question on the other side of the water. To this end I will quote a few extracts from the presidential address of Dr. Peter Procter, president of the Liverpool Branch of the British Homeopathic Society, entitled "The Province of Homeopathy in Medicine," and found in the January number of *The Journal of the British Homeopathic Society*.

DR. PROCTER says: "While homeopathy has its supreme place within its own province, it does not cover the whole domain of medicine, and that outside its special province it must yield to other laws." "We must frankly allow the law of contraries to exist and to be a true law, as is admitted by our late colleague, Dr. R. Hughes, and, indeed, by all liberal-minded men on our side. . . . In short, in any severe organic failure, where relief must be immediate, there is no alternative to the giving of the special physiological stimulant. This rule applies often in cases of aged patients in whom the vital reaction is feeble, and can hardly, at times, be eluded at all. We have in such cases to fall back upon stimuli whose entire physiological action is not absorbed in their therapeutical, but whose physiological action is very much wanted."

"The law of *similia similibus curantur* is perhaps the most comprehensive that has ever been proposed in the whole history of medicine, and it is amazing to see the extent of its usefulness, but that it covers the whole ground is obviously not true. We have for a long period been testing its capacities in every direction, and rightly so, but now I venture to submit some attempt should be made to define its limits."

In the second place, I would point out the obvious fact that the mere universality of any law, whether of physics or physics, affords no guaranty of its scientific sufficiency. Gravitation is probably a universal property of matter, but it is not the only force in the universe. So with homeopathy, true and universal as

it may be, it yet has its range of action, and it is for us to determine its province in the domain of medicine."

When the older school of medicine will recognize and acknowledge the curative action of drugs prescribed in accordance with the homeopathic principle of therapeutics, to the same extent that we acknowledge the more palliative effect of drugs from the physiological therapeutics of the older school, there will be no line dividing us as a profession; and Dr. Shattuck's kindly expressed desire of the necessity, on this ground, of but one state medical society in Massachusetts may be realized.

I know our guest will not consider it discourteous to him if I express disagreement with him concerning a few points which he brought out in his address.

Dr. Shattuck says there are very few specifics in medicine. This I grant to be the case in physiological therapeutics; but when we consider that homeopathic drug prescribing is the giving of a remedy which, by means of its selective or affinitive action which nature has given it, will select out and operate directly upon the same part as the disease and, in accordance with the homeopathic principle of therapeutics, will produce upon that part drug effects which enable and cause the part to throw off the disease, we can appreciate how this direct specific or curative action of drugs characteristic of homeopathy causes these curative remedies to become literal specifics for the various phases of disease against which they are prescribed.

Another point, and as an outcome of this action of remedies, drugs have not lost their pre-eminence in homeopathic therapeutics, which Dr. Shattuck states is the case in the therapeutics of the older school.

I am sincerely glad Dr. Shattuck has brought up the matter of suggestion; but I am sorry that he attributes the success of homeopathic therapeutics to this factor, for such is not the case. I am glad he brought it up, because too much emphasis cannot be placed upon the fact that mental suggestion furnishes the explanation of results obtained by those methods of practice properly belonging to the sphere of psycho-therapy, of which mental healing and Christian science are notable examples.

But when Dr. Shattuck accounts for the curative action of homeopathic remedies through suggestion, he does not recognize the fact that homeopathic remedies act as markedly upon the animal as upon the human; as Dr. Neidhard so convincingly demonstrated by the clinical results obtained with these remedies in the so-called epizo-otic which prostrated so many of the horses in Philadelphia during the early sixties that the fire and other public service, dependent upon them, was seriously crippled; nor does he recognize the curative effect of homeopathic remedies upon infants and the younger children; nor upon adults when circumstances attending their sickness make suggestion impossible of operation; in neither of which cases could such favorable action be properly ascribed to suggestion. On the other hand, and proving the place suggestion occupies in the results obtained by Christian science and all other psychopathic cults, their results are not forthcoming in any cases or under any circumstances where suggestion cannot operate.

I must again differ with Dr. Shattuck in his statement that homeopathy has outlived its usefulness. Those of us who, from our intimate connection with it, know that homeopathy furnishes the most successful therapeutic method of treating disease, and that, too, with specific remedies acting strictly curatively, know also that such a method will continue to live its life of usefulness; and further, we believe it will ultimately be acknowledged by the entire profession to consist essentially of a therapeutic specialty in medicine. As

such, there is no more reason why homeopathy or its practitioners should be discriminated against by the American Medical Association, or its allied state and county societies, than electro-therapeutics or any other specialty now recognized by this national association of the older school.

In closing, I desire to express my personal appreciation to Dr. Shattuck for addressing us this evening, and for extending to us the olive branch. We accept it in the spirit that it is the forerunner of that true affiliation between our two so-called schools of medicine, which can readily be brought about when full fellowship is extended to us, by the older school, which carries with it a recognition of us as physicians who have added to our knowledge and practice of medicine a special knowledge and practice of homeopathic therapeutics.

When Dr. Shattuck closes this discussion, will he kindly tell us whether or no he believes it possible for drugs to cure disease in accordance with the homeopathic principle of drug action; and if so, to what an extent does he believe this to be possible?

DR. RICHARD C. CABOT: I am delighted to add a word to this discussion. I have certainly been very much instructed. I wish a larger number of our school could have been present to see, in the first place, the admirable spirit in which you have received Dr. Shattuck, and to hear what we have heard from Dr. Wesselhoft, Dr. Moore and the others. We need to know more about each other. We need to know more about you; you need to know more about us. I do not believe we differ anywhere nearly as much as we have supposed. I feel sure that when we come together it cannot be by wholly giving up the spirit of either movement. No process of agreement can ever come about in that way. There always has to be maintained something of the spirit of that which was before.

The thing that surprises all of us, I think, who come in contact with homeopathic practitioners, is how little we differ. In the old days I have been told it was a rule that practitioners of our school were not supposed to consult with members of the other school. Following the practice of the illustrious professor of medicine from whom you have heard, I have taken every opportunity of consulting with members of your school. I have never been able to discover the difference between your practice and ours. I recently saw a patient in consultation with Dr. Rockwell, of Cambridge, a member of your school. We agreed entirely as to the diagnosis and treatment, and as a result of that treatment I hear lately that the patient is much improved.

I certainly have very little confidence in most of the electro-therapy of which Dr. Moore has spoken. If the American Medical Association can take in the electro-therapists I cannot imagine why it cannot take in the homeopaths, especially if homeopathy is to be an addition to and not a subtraction from medicine.

We want the truth; you want the truth; none of us wants anything else. On that basis, what can longer keep us from unity? I was delighted to hear what Dr. Wesselhoft said as to the prospect of tests in this matter. That is what we want; tests by representatives of your association and ours, by men of the highest standing, public tests; then we shall be getting evidence appealing to us all, commanding adherence from us all. I hope before many months are past such tests will be under way, and I am sure if any one on our side can help in these tests it will be with the greatest pleasure that we shall do it.

DR. SHATTUCK (in closing): Dr. Moore asked me a question. In that question he used a word which we of the old school do not often use, namely, "cure."

We very seldom cure our patients. Our patients get well — or they don't. The cases in which we can say that we cure are very small in number. Boerhaave's words are true to-day, "I cared for him, God cured him."

Some years ago in Lyons I was making a visit with a physician, and in his delightful French he said: "The physician rarely cures; he often ameliorates, he always consoles."

As far as remedies go I have had the pleasure of seeing several cases with Dr. Moore and he was giving the patients just about what I should have given them and in just about as big doses. He has not called me in in the cases in which a specific is needed.

Several of you have been good enough to speak of my kindness in coming here to-night. I do not look at it in that way. When your president invited me to come I accepted his invitation with alacrity. I thank you for the privilege.

THE SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

EIGHTEENTH ANNUAL MEETING HELD IN LOUISVILLE, KY., DEC. 12, 13 AND 14, 1905.

(Continued from No. 12 p. 325.)

GOITRE, WITH A REPORT OF 182 OPERATIONS UPON THE THYROID

DR. CHARLES H. MAYO, of Rochester, Minn., said that surgery of the thyroid was increasing. Operations were as satisfactory as any made, giving relief with brief disability. In fifty years the mortality had fallen from 10% to less than 3%. Kocher's being 2%. Accessory glands, like branchial cysts, were more often found in the lines of hypoblastic involution. The lymphatics served as ducts. Total extirpation was followed by cachexia in from 50% to 70% of cases. Graves' disease was probably due to an over or perverted secretion, the gland showing a general or local condition of cell activity.

The great majority of enlargements in young people responded to medication. Part of the benefit attained in the removal of the sympathetic was from cutting the lymph channels draining the thyroid. During the past seventeen years the Mayos had operated upon 182 thyroids, with 9 deaths. Of these, 57 were cases of well-marked Graves' disease, with seven deaths in all, and but one in the last twenty-three. Of these cases, 50% made an early recovery; 25% did so during several months. The remainder were improved, but had occasional relapses of a temporary nature. Among the remaining 125 operations representing cysts, colloid, parenchymatous and 5 malignant tumors, there were but 2 deaths, one from pneumonia, the other from tracheal collapse on the third day following extirpation of a carcinomatous goitre. Cocaine was used in 13 cases, but ether anesthesia preceded by morphia and atropine was the rule. The head was maintained in the high position. The incision was usually transverse. Parenchymatous enlargements, and some colloid were extirpated; cysts and encapsulated growths were enucleated. Saline solution was freely given after operation.

THE DIAGNOSIS OF RENAL CALCULI

DR. GEY EMMY HENNER, of Baltimore, Md., took up the subject from the general relationships, first considering the various other maladies of the kidney from which nephrolithiasis must be differentiated, and then discussing the diseases of other organs which might

mislead the diagnostician. The Roentgen ray and the wax-tipped bougie were considered invaluable aids in the diagnosis of renal calculus, but they both failed at times, and the importance of the urtic examination in all suspected kidney cases was emphasized. Several cases were reported to illustrate the difficulties of diagnosis.

REQUIREMENTS AND QUALIFICATIONS FOR A SUCCESSFUL CAREER IN SURGERY.

The President, DR. LEWIS C. BOSHER, of Richmond, Va., selected this subject for his address, and said, among other things, to the recent graduate in medicine no department of his chosen profession appealed with the same force as did surgery. While a student he had been impressed by the brilliancy of the results secured by his professors before his very eyes; at the meetings of the Alumni the clinics in surgery were crowded, while those in other branches were usually either simply attended or else attended as a complement to the individual holding them rather than from actual interest in the subject. In most medical colleges the prominence of the professors of surgery in all faculty affairs was well-known; while, considering the more material side of the question, he had little trouble in ascertaining that it was no unusual thing for a surgeon to secure for a single operation, occupying but an hour or two, or even less, a fee greater than the entire collections of the general practitioner for a week's steady work, with broken rest and with cares and responsibilities innumerable. On leaving college, if he entered into hospital service, these facts were impressed on him with even greater force, and later on, having himself entered the ranks of struggling practitioners, the same lessons were borne in upon him with increasing emphasis. Little wonder was it, then, that so many young medical men, bearing all these things in mind, decided that they, too, would enter this alluring field, where they believed they would effect such marvelous results in brilliant cures, in abundant pecuniary reward, in the homage of their fellowmen, and, it moved by even higher motives, in the eternal good they might do to suffering humanity.

Dr. Bosher called attention to the importance of an academic education. Many a man had attained success in surgery without this advantage, but we were dealing with the rule, not the exception. This academic education should be truly liberal, both in quantity and quality, and should include as much as possible of studies of a scientific nature, especially biology, physics and chemistry. Of these three branches, physics would prove of the greatest use to the surgeon, while biology and chemistry were branches of more practical value to the general practitioner.

It was incumbent on our teachers and practitioners of surgery to make it plain to the public that there was no material difference between the trained surgeon and the layman. The latter often would enable the public to discriminate as a whole as a matter and would ultimately have the effect of rendering it apparent to the candidate for surgical practice that he must properly equip himself before he could stand before the world as a representative of the great surgical art.

TRAUMATISM OF THE UTERUS AND PERITONEUM OF THE KIDNEY

DR. RUFUS B. HART, of Chicago, Ill., presented a paper on this subject, to which he reported two cases, and said that the ultimate results were most gratifying, and said that he hoped they might be of sufficient interest to warrant their record in detail. The exact nature of the injury was not determined in either case. The first patient was a girl, a year or less of age, who had

a male, seventeen years of age. In reviewing the history of the first case, he was inclined to believe that there was a free rent either in the pelvis of the kidney or in the ureter.

In the second, there was a narrow opening either in the ureter or the pelvis of the kidney, from which urine leaked very slowly at first. In this case rupture had taken place evidently on Sept. 10. It was more than ten days later before urine was extravasated to make a palpable tumor so that it could be outlined. On Nov. 1, the tumor appeared to be not larger than the boy's head. Both patients were relieved by operation, with drainage.

ANEURYSM TREATED BY SUTURE INSIDE THE SAC.

Dr. F. W. PARHAM, of New Orleans, La., read a paper on this subject in which he reported two cases treated after the method of Matas. One was an idiopathic aneurysm of the popliteal artery; the other, an aneurysm of the second and third portions of the left subclavian. The popliteal aneurysm was treated by suture inside the sac of proximal and distal openings separately, and continuous suture of the groove of the artery intervening. In the subclavian case only the proximal opening was sutured, the distal bleeding being controlled by ligatures. Both patients recovered.

The indications for this procedure were: (1) The practicability of laying open and inspecting the interior of the sac. (2) The possibility of applying a constrictor, clamp, or temporary ligature to the proximal side of the tumor.

In the second case reported, the suture was employed because the proximal ligature failed to stop the bleeding completely.

The operation of suture within the sac was to be preferred to ligature, because, first, every possible bit of artery was saved except that actually forming the sac of the aneurysm. Second, suture accomplished simple approximation of the intima, and did not cut through as might happen with ligature of an atheromatous artery. Third, all collateral bleeding in the sac was stopped by direct suture of the vessel mouths within the sac, and packing of the sac became unnecessary. Fourth, hence there was no disruption of the outside vascular (collateral) connections of the sac wall, already much relieved by the emptying of the sac.

The reconstruction of the artery was to be attempted only in certain cases, as in aortic aneurysm, where suture of the proximal opening would, like ligature, probably be fatal, and in other aneurysms where from swelling and lymphangitis, as in Morris's case, the danger of gangrene was too great to risk any interference with the nutrient stream. In such case reconstruction of the artery might be preferred for two reasons: (1) Because even a temporary continuance of the main stream would be a great advantage until the subsidence of edema consequent upon the evacuation of the sac shall have somewhat relieved the stress upon the collateral vessels; and, (2) because, as remarked by Matas, and shown in Dana's case, it was feasible at a secondary operation to again open the sac and close the arterial opening.

In abdominal aneurysms the method of Matas offered some hope of cure.

VARICOSITY OF THE SAPHENOUS VEINS WITH RESULTING VARICOSE ULCER.

Dr. ROBERT CAROTHERS, of Cincinnati, Ohio, mentioned the operations most commonly employed for the relief of this condition, and among them reference was made to the Schede operation, the Trendelenburg, but, he said, complete excision of the internal saphenous vein was undoubtedly the most satisfactory

operation to be employed; but until the ingenious invention, by Charles H. Mayo, of two instruments which subcutaneously strip the vein, it was an operation requiring a long incision, tedious dissection and considerable time for its performance. This operation, as advised by Dr. Mayo, was, that after making a small incision in the upper third of the thigh over the saphenous vein, the vein was located, tied in two places cut between the ligatures, and the distal end threaded into the enucleator, which was pushed under the skin along the course of the vein for about six to eight inches, where another small opening was made on to the instrument, the vein taken out, then the instrument drawn out from the first opening, rethreading the vein into the instrument, and again pushing it under the skin for another six or eight inches, another small incision on to the instrument allowing the vein to be drawn out, which was again ligated and removed. The lateral branches were torn off, and, as a rule, closed themselves. This operation was very quickly and easily performed, but was not without danger from hemorrhage or sepsis. He has twice done this operation and the immediate results were satisfactory. His cases were too new to say what would be the ultimate result. They were old cases with large troublesome ulcers treated by skin grafting. The patients were able to leave the hospital in less than three weeks, wearing an elastic porous bandage for support, and were now, at the end of about eight weeks, both at work as housewives. In one case in which there was a troublesome eczema, after an effort for one week to relieve the same, he again followed the advice of Dr. Mayo, sealing the eczematous area with compound tincture of benzoin, until the skin wound had healed.

THE DANGERS IN SCOPOLAMIN-MORPHIN ANESTHESIA.

Dr. HORACE J. WHITACRE, of Cincinnati, Ohio, read a paper with this title, in which he based his conclusions upon observations made in forty cases of anesthesia induced by this method, upon animal experimentation, and upon a review of all deaths that have been reported in the literature up to the present time: "(1) Scopolamin-morphin narcosis is not devoid of danger. (2) The use of scopolamin-morphin alone for surgical narcosis is not justifiable, and in my experience is not practicable. (3) A single dose two hours before operation lessens the discomfort attendant upon the operative procedure to a high degree, and may obtain a definite place in surgical practice. (4) Four deaths have occurred in a series of twenty-four hundred collected cases which have been so definitely related to the use of this method of narcosis that they are probably scopolamin deaths, this, however, in the absence of autopsy demonstration. (5) These deaths have been reported as occurring with a type picture of alkaloid poisoning, and heart failure has been given as the direct cause of death. (6) A fatty degeneration of the liver and kidney has been produced by repeated doses of scopolamin alone, and of the scopolamin-morphin combination, in animals. (7) This method of producing or assisting narcosis cannot yet be recommended for use in general practice in spite of the great advantage it seems to offer."

SCOPOLAMIN-MORPHIN-ETHYL CHLORIDE-ETHER ANESTHESIA.

Dr. H. A. ROYSTER, of Raleigh, N. C., said that of all the combinations suggested for aiding and abetting these agents, that which formed the subject of his paper commended itself to him, because he believed, first, that ether was our safest general anesthetic;

second, that ethyl chloride secured the pleasantest primary narcosis; third, that the preliminary use of scopolamin with morphin increased the patient's mental resisting power and lessened the quantity of ether. In his opinion there could be no question of the superiority of ethyl chloride over nitrous oxide gas as a preliminary to ether anesthesia. Its action was more certain and constant and equally agreeable, and he could not help feeling that it was safer. This experience in regard to the combination of morphin and scopolamin was confined solely to the use of those drugs prior to the administration of ether. Of those who had investigated scopolamin, some state that it was isomeric with hyoscin; others that the effect in the combination was due largely to morphin; still others that the drug was dangerous and uncertain in its action. Its most marked effects were in quieting the nerves and fears, the promotion of an easy courage in beginning the anesthetic, and a prolongation of the restful sleep afterwards. Clinical tests had led him to conclude that scopolamin was not identical with hyoscin, and that it did something more than morphin alone, and that it was safe in proper doses.

He sounded a note of warning in regard to the use of scopolamin, inasmuch as several deaths had followed its employment.

OVERLAPPING THE APONEUROSIS IN THE CLOSURE OF WOUNDS OF THE ABDOMINAL WALL.

DR. CHAS. P. NOBLE, of Philadelphia, recommended a method of overlapping the aponeuroses which he had used with the utmost satisfaction for nine years, in the closure of all wounds of the abdominal wall, including the Alexander operation, inguinal and umbilical hernia, diastasis of the recti muscles, appendectomy and nephrorrhaphy. In but a single case did he know of a post-operative hernia where the abdominal wound had been closed by this method. When drainage was employed through the abdominal wound, the method was not applicable. The technique of the operation was illustrated by several drawings which demonstrated the method clearly. He closed his article by describing the methods of overlapping the fasciae employed by Lucas-Championniere and B. Wyllis Andrews in the operation for inguinal hernia.

THE EARLY DIAGNOSIS AND RADICAL CURE OF CARCINOMA OF THE PROSTATE, WITH A REPORT OF FORTY CASES.

DR. HUGH H. YOUNG, of Baltimore, Md., presented these conclusions, which were drawn from this study of forty cases: Carcinoma of the prostate was more frequent than was usually supposed, occurring in about 10% of the cases of prostatic enlargement, as shown by Albarran. It might begin as an isolated nodule in an otherwise benign hypertrophy or a prostatic enlargement which had for many years furnished the symptoms, and signs of benign hypertrophy might suddenly become malignant. Marked induration, if only an intralobular nodule in one or both lobes of the prostate in men past fifty years of age, should be viewed with suspicion, especially if the cystoscope showed little intralobular prostatic outgrowth, and pain and tenderness were present. The posterior surface of the prostate should be exposed as for an ordinary prostatectomy, and if the operator was unable to make a positive diagnosis of malignancy, longitudinal incisions should be made on each side of the urethra, as in prostatectomy, and a piece of tissue excised for frozen sections, which could be prepared in about six minutes and examined by the operator at once. If the disease was malignant, the incisions might be cauterized and closed and the radical operation performed. Cancer of the prostate remained for a long time within the confines of

the lobes, the urethra, bladder and especially the posterior capsule of the prostate resting inviolate for a considerable period. Extraprostatic invasion nearly always occurred, first, along the ejaculatory ducts into the space immediately above the prostate, between the seminal vesicles and the bladder, and beneath the fascia of Denonvilliers. Thence the disease gradually invaded the inferior surface of the trigone and the lymphatics leading toward the lateral walls of the pelvis, but involvement of the pelvic glands occurred late and often with disease metastases into the osseous system without first invading the glands. Cure could be expected only by radical measures, and the routine removal of the seminal vesicles, vasa deferentia and most of the vesical trigone with the entire prostate, as carried out in four cases by the author and fully described by the illustrations, was shown to be necessary by the forty cases, including eight autopsies and ten operations.

The four cases in which the radical operation was done demonstrated its simplicity, effectiveness and the remarkably satisfactory functional results furnished.

(To be continued.)

Recent Literature.

Urinary Analysis and Diagnosis. By LOUIS HEITZMANN, M.D. Second revised and enlarged edition. New York: Wm. Wood & Co. 1906.

The author has evidently spent much time in the preparation of this work and in revising it. The methods given for the analysis of urine are mostly old-time methods and those which are not are without much value. Particular stress is laid upon diagnosis, what we may term "cellular diagnosis." The author makes claims which are far beyond those of any pathologist or other microscopist; for example, he is able to tell by the microscopic appearance of a cell in the urinary sediment whether or not it is a renal cell, and if a renal cell, from which uriniferous tubule of the kidney it comes—convoluted or straight tubule. It is safe to say that such ideas have not been generally accepted. The book has little if any practical value.

The Modern Mastoid Operation. By FREDERICK WHITING, A.M., M.D. Philadelphia, P. Blakiston's Son & Co. 1905.

The complete mastoid operation, as advocated by Whiting, consists mainly in the reflection of large flaps of skin over the process, and secondarily in the ablation of the mastoid, including the cells in the posterior root of the zygoma. The author deems this expedient in all cases, thinking that in this way all danger of recurrence of the disease is prevented.

The subject is treated exhaustively, a separate chapter being devoted to each step of the operation; in addition there are chapters mainly historical, while the pathology of the disease and the post-operative treatment are also considered.

The illustrations are really beautiful, and greatly add to the value of the work.

A Textbook of Physiological Chemistry. By JOHN H. LONG, M.S., Sc.D., Professor of Chemistry in Northwestern University Medical School, Chicago. Philadelphia: P. Blakiston's Son & Co. 1905.

This new contribution to Physiological Chemistry is comprehensive and is a book of 413 pages. The subject matter is divided into four sections as follows: 1. The nutritious and related substances; 2. Ferments and digestive processes; 3. The chemistry of the tissues and secretions of the body; and, 4. The end products of metabolism, excretions and energy balance. Under each section are chapters devoted to the individual subjects. Much attention is given to processes of digestion, to the ferments and to the chemistry of the blood, but comparatively little to the urine. An outline has been given of the chemical phases of the recent theories of immunity, and a short explanation of the important applications of the methods of cryoscopy and electrical conductivity and other physical processes in the field of chemistry related to medicine. A number of illustrative experiments are given in the text, but there are no references to the literature of the various subjects treated. The book is a credit to the author and a thorough, up-to-date textbook.

The Diagnosis of Tuberculosis of the Lung. With Special Reference to the Early Stages. By DR. K. TURBAN, Privy-Councillor of the Grand Duchy of Baden. Director of the Sanatorium at Davos. With an introduction by Sir Dyce-Duckworth, M.D., LL.D., F.R.C.P. Translated by Egbert C. Morland, M.D., B.Sc. (Lond.). pp. 135. New York: William Wood & Co. 1906.

The necessity for early diagnosis in pulmonary tuberculosis is appreciated by no one more than by the director of a sanatorium, for success in treatment is dependent largely upon the early recognition of the pathologic condition. Dr. Turban speaks with the authority born of large experience. He not only emphasizes the importance of early diagnosis, but also describes in minute detail the methods essential to that diagnosis. In this description of pathologic conditions and the physical signs produced by them, Dr. Turban goes far beyond the limits set by the ordinary textbooks. Herein lies the chief value of the book.

A Guide to Anesthetics. For the student and general practitioner. By THOMAS B. LUKE, M.B., F.R.C.S. (Ed.), Instructor in Anesthetics (University Surgical Classes), Royal Infirmary, Anesthetist to the Deaconess Hospital, and the Dental Hospital, Edinburgh. With 45 illustrations. Second edition. Edinburgh and London: William Green & Sons. 1905.

This book is a guide as to how to administer the various anesthetics rather than a statement of how the different anesthetics produce their

therapeutic effects. Ethyl-chloride is, in the author's opinion, the most valuable anesthetic. He believes that it bids fair within a few years to be the most frequently employed anesthetic that we possess. In the summary of the history of anesthetics, on page 6, the statement regarding the administration of ether should read "Dr. Warren operating" rather than "Dr. Collins operating." We are glad to see that Dr. J. Bapst Blake's ether inhaler is recommended by Dr. Luke as the best method of administering ether by the semi-open method. The book is thoroughly practical and is certainly one of the best guides to the use of anesthetics for the student or general practitioner.

Koplik on Diseases of Children. A Treatise on the Diseases of Infancy and Childhood. For Students and Physicians. By HENRY KOPLIK, M.D., Pediatricist to Mt. Sinai Hospital, Ex-President American Pediatric Society, etc., New York. New (2d) edition. Revised and enlarged in text and illustrations. Octavo, 868 pages, 184 engravings and 33 plates. Philadelphia and New York: Lea Brothers & Co. 1905.

This second edition of Koplik's well-known work has been thoroughly revised and enlarged, the text containing nearly 200 more pages. The number of the illustrations has been increased and their character improved. The author's personal views are more evident than in most textbooks. The references to current literature, so valuable in the first edition, have been retained. The work is in every way practical, especial attention being devoted to treatment, which is, on the whole, rational and satisfactory. We are surprised, however, at the low dosage of diphtheria antitoxin recommended. The section on the specific infectious diseases has been much enlarged and that on infant feeding entirely remodelled. This section which was, perhaps, the least satisfactory in the first edition, is now very good. We like very much the way in which the subject is approached, although we cannot agree with all of the author's ideas. This edition is a decided improvement on the first which was, however, itself very satisfactory.

Saunders' Question Compend. Essentials of Materia Medica, Therapeutics and Prescription Writing. By HENRY MORRIS, M.D., College of Physicians, Philadelphia. Seventh edition, thoroughly revised, by W. A. BASTEDO, Ph.G., M.D., Instructor in Materia Medica and Pharmacology at the Columbia University (College of Physicians and Surgeons), New York City. 12mo. 300 pages. Philadelphia and London: W. B. Saunders Co. 1905.

The book is well arranged, in the form of questions and answers, contains, as its name indicates, the essentials of materia medica and therapeutics, and will prove a useful book for student use. In this, its seventh revision, it is brought into accord with the last (1905) Pharmacopœia.

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MASSACHUSETTS GENERAL HOSPITAL HOUSE PUPILS' ALUMNI ASSOCIATION.

The first meeting of the Massachusetts General Hospital House Pupils' Alumni Association was held March 21 in Boston. The afternoon was taken up by various clinics and demonstrations at the Massachusetts General Hospital, where an opportunity was given previous house pupils to inspect the improvements, both in accommodations and in technique, which have taken place within the past few years. This meeting was well attended by many former house pupils of the hospital, not only from this neighborhood but also from cities at a distance. In the evening, final organization was effected at a dinner held at the Hotel Vendome at which between one hundred and fifty and two hundred former house pupils and members of the staff of the hospital were present. Dr. E. H. Bradford presided with grace and dignity, and a large number of speeches were made by men long associated with the hospital and conversant with its early history.

The first speaker was Dr. James C. White who was elected president of the Association. Dr. White spoke in a reminiscent vein of conditions at the hospital in the middle of the last century, and of the achievement of the past and the possibilities of the future. Dr. Henry P. Walcott, chairman of the Board of Trustees of the hospital, assured the assemblage that in spite of the great changes which had taken place within the last fifty years even more would occur during the succeeding half century. The means, he affirmed, are already in sight which will render the Massachusetts Hospital stronger than any

other, either old or new, in this community. Dr. Walcott made an appreciative reference to Drs. John C. Warren and James Jackson, founders of the hospital, and alluded to their far-sighted policy in insisting that the hospital was not only for the care of the sick, but also was to be regarded as an indispensable addition to the Medical School. In conclusion he said, "I congratulate you on your auspicious beginning and I know that the end will never come."

Following Dr. Walcott, Dr. L. C. Shattuck spoke for medicine at the hospital. He referred to the fact that the Massachusetts General Hospital was following the example of the Boston City Hospital in forming an alumni association, and put in a plea, tempered with much humor, for a more generous recognition of the claims of medicine as opposed to surgery. Dr. Arthur T. Cabot discussed surgery at the Massachusetts Hospital from the early days down to the present, and urged the members to build up the Treadwell Library at the hospital by sending their various reprints and publications. Dr. C. B. Porter also spoke in a reminiscent vein and described his early efforts toward a more general consideration of the staff in relation to the trustees. Dr. H. P. Howard, resident physician, spoke appreciatively of the conditions as he met them at the hospital when he undertook the superintendency, and expressed the hope that sometime a boulevard would be cut through in such a way that the Bulfinch front of the old hospital building might come again into public view.

Dr. W. S. Thayer of the Johns Hopkins Medical School, who was introduced as "one who had climbed the pinnacle of science," spoke of his perennial pleasure in returning to the Massachusetts Hospital and the inspiration he derived therefrom. Much of his speech was, however, in lighter vein, as was that of John B. Blake who followed him. Dr. George I. Walton, closed the literary portion of the evening with some verses, which added much to the increasing feeling of good humor which was by this time pervading the assemblage. The evening was further enlivened by many admirably rendered songs under the general direction of Dr. H. C. Baldwin.

The beginning of this new association, due largely to the efforts of certain of the younger men, among whom Dr. G. W. W. Brewster and Dr. L. A. Wadleigh, Jr., should be especially mentioned, was certainly as auspicious as Dr. Walcott said and there can be small doubt that it will increase in usefulness and prosperity as time goes

on. The advantages which may develop from such an organization of men who have had their training in one hospital, but who are practising in various localities, cannot be over-estimated.

THE ANNUAL MEETING OF THE AMERICAN MEDICAL ASSOCIATION AT BOSTON.

THE next annual meeting of the American Medical Association, as our readers in general already know, is to be held in Boston, from June 4 to June 9 after an interval of forty-one years.

The General Committee of Arrangements with the five sub-committees, again many times subdivided, have already for many weeks been occupied with the preliminary preparations, and matters are now so far advanced that it is possible to give some outline of the probable provision for the entertainment and instruction of the visitors, outside of and apart from the usual routine professional work of the Association for which the various halls in the Back Bay District of the city have been engaged.

At the opening meeting prayer will be offered by the Rev. Edward Everett Hale, and there will be an address of welcome by President Eliot, in addition to short addresses by the president and president-elect of the Association, by the president of the Massachusetts Medical Society, the Governor of the Commonwealth, and it is hoped the Mayor of the city.

Harvard University has given permission to use the new Medical School buildings, and it is proposed to have three afternoon teas from 4 to 7 o'clock with music in the quadrangle and on the terraces of those buildings. These teas will be conducted by the ladies connected with and under the direction of the Committee on Entertainments. One evening will be devoted to a reception given to the president of the Association by the profession of New England. One evening there will be a special concert at Symphony Hall, and special facilities will be offered for the theatres. There will probably be a reception, with music, by the city in the fine building of the Public Library, and one by the trustees at the Art Museum. Harvard College and Cambridge are easily reached and will be at their best at that season.

It will be the aim of the appropriate committee to facilitate excursions to historic places, such as Plymouth, Lexington and Concord, to the attractive suburbs of Boston, and to points on the seashore. For those who desire that pleasant

experience, a Rhode Island elmbake may be made possible and, in combination with this or apart from it, a visit to Newport might be secured.

As relaxation for the serious laborers in the medical vineyard there will be the different hospitals and clinics, a scientific exhibit, clinical exhibits and a commercial exhibit. The commercial and educational exhibits will be held in Mechanic Building. The committee on the commercial exhibit states that it intends to have the exhibit excel in quality rather than in size. With this end in view such firms only will be invited to exhibit as have been passed upon by the committee, and any others asking for space will be subjected to a like inquiry. Drug firms showing their goods here will thereby be recognized by those in charge as reliable. There will also be a show of motor cars.

The following are the hotels selected for headquarters: The Vendome, for the general officers; the Brunswick, for the section of surgery; the Copley Square for the section of obstetrics and gynecology, and for the section of pathology and physiology; the Lenox, for the section of ophthalmology; the Nottingham, for the section of diseases of children, as well as for the section of cutaneous medicine and surgery; the Oxford, for the section of pharmacology; the Somerset, for the section of medicine; the Thorndike, for the section of hygiene and sanitary science, and for the section of laryngology and otology; the Touraine, for the section of nervous and mental diseases; the Westminster, for the section of stomatology.

The War Department has agreed to send on an army field-hospital, which will be conveniently placed for the study and inspection of visitors. The Navy Department will send some representative vessels ranging from the most modern battleship, down through the armored cruiser to the torpedo boat destroyer. These will lie at the Charlestown Navy Yard, where the visitor may see the great new dry dock, and then revert to an earlier period of our history by walking the deck of the "Constitution" (Old Ironsides) and climbing the monument on top of Bunker Hill. He will naturally have previously been to the Old South Church of Revolutionary tea-party fame, and to the Old State House where the Lion and the Unicorn are still rampant.

Perhaps after this our industrious visitor will feel inclined at the end of the week for a few quiet days off at the shores and lakes of Maine, or amid the hills of New Hampshire or Vermont. However this may be, it will be the aim of the

committee on transportation to make his arrival devoid of friction and to smooth his departure, if go he must, wherever possible.

A MEDICAL AND HISTORICAL GUIDE BOOK OF BOSTON.

THE Committee of Arrangements for the coming meeting of the American Medical Association, have had prepared a Medical and Historical Guide Book of Boston, which is to be presented to each visiting member of the Association. The work has been in the hands of one of the sub-committees who have given much time and thought to the undertaking.

Matters of past and present medical interest, and the various medical institutions are to be included, thus making the book appropriate for this gathering.

In addition to these special features, an adequate and satisfactory guide to the city of to-day will be furnished.

The maps are to be modern and the illustrations both copious and attractive.

ANATOMY IN AMERICA.

A RECENT copy of the *Bulletin* of the University of Wisconsin is devoted to a discussion of anatomy in America from the pen of Dr C. R. Bardeen, professor in the University. Dr Bardeen's effort has been to gather together in comparatively small compass a history of the development of the study of anatomy in this country with a list of the more important investigations and a description of the present status of this branch of medical science. The subject is regarded from the broad general standpoint which has been rather slow of growth in this country, and considers anatomy from the developmental and biological standpoints as well as on the purely descriptive side. It is, in fact, only within recent years that contributions of significance in the anatomical sciences have appeared in America. There is every evidence, however, that this period of unproductiveness is past and that anatomy hereafter will be cultivated with vigor and enthusiasm by men whose time is not distracted by the exigencies of medical practice. Following the general description of the subject, Dr Bardeen discusses at considerable length the position of anatomy in other countries, the work done at individual medical schools, care of anatomical material, endowments, salaries, and various other matters of interest primarily to the anatomist, and secondarily to the profession at

large. Dr. Bardeen has certainly rendered a definite service to the gradual growth of medical history in this country by adding this admirably prepared account of one of the fundamental branches of medicine.

MEDICAL NOTES

YELLOW FEVER ON THE Isthmus of PANAMA.

— It is reported that a case of yellow fever has appeared at Bocas del Toro on the Isthmus and that a conference will forthwith be held to provide for the most efficient means of eradicating the disease there.

THE BOSTON MEETING OF THE AMERICAN MEDICAL ASSOCIATION. — In its discussion of rates to Boston we notice the *California State Journal of Medicine* says: "The prospect of securing this concession seems good, but even if it cannot be arranged, the one-fare rate, plus the local fare from Boston to New Haven, will be very much less than the regular rates which heretofore we have been compelled to pay. It is to be hoped that a large number of our physicians will take advantage of this opportunity to attend what will undoubtedly be the biggest meeting the Association has ever held."

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. —

For the week ending at noon, March 28, 1906, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 31, scarlatina 31, typhoid fever 1, measles 102, tuberculosis 30, smallpox 0.

The death-rate of the reported deaths for the week ending March 28, 1906, was 21.12.

BOSTON MORTALITY STATISTICS. — The total number of deaths reported to the Board of Health for the week ending Saturday, March 24, 1906, was 268, against 209 the corresponding week of last year, showing an increase of 59 deaths and making the death-rate for the week 23.48. Of this number 145 were males and 123 were females, 265 were white and 3 colored, 159 were born in the United States, 102 in foreign countries and 7 unknown, 56 were of American parentage, 182 of foreign parentage and 30 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria 53 cases and 3 deaths, scarlatina 32 cases, no deaths, typhoid fever, 6 cases and no deaths, measles, 178 cases and 5 deaths, tuberculosis 39 cases and 30 deaths, smallpox, no cases and no deaths. The deaths from pneumonia were 44.

whooping cough 3, heart disease 28, bronchitis 13, and marasmus 6. There were 19 deaths from violent causes. The number of children who died under one year was 49; the number under five years, 77. The number of persons who died over sixty years of age was 64. The deaths in public institutions were 82.

There were 11 cases and 3 deaths of cerebro-spinal meningitis reported during the week.

LECTURE BEFORE MASSACHUSETTS VOLUNTEER MILITIA. — Col. Valery Havard, Assistant Surgeon General United States Army, will address the medical officers of the Massachusetts Volunteer Militia at 3 P.M., Wednesday, April 4, at the South Armory, Irvington Street, Boston. While this lecture is primarily for the medical officers of the militia, civilian physicians will be welcome.

LOWELL TUBERCULOSIS EXHIBITION. — A tuberculosis exhibition under the auspices of the Lowell Anti-Tuberculosis Association was held March 19 to 26 in that city. The exhibition was open daily from 10 A.M. to 10 P.M., and each evening an address was given by physicians and others regarding the general subject in the same manner as in the Boston exhibition which was attended with success. Among the speakers were Dr. W. T. Councilman, Dr. G. S. C. Badger, Prof. William T. Sedgwick and Mr. Alexander M. Wilson, secretary of the Boston Society for Prevention and Control of Tuberculosis.

NEW YORK.

BETH ISRAEL HOSPITAL. — The large Purim biall, given at the Madison Square Garden on March 14, netted nearly \$15,000 for the Beth Israel Hospital.

BEQUEST TO WOMAN'S HOSPITAL. — By the will of Mrs. Helen Ellis Cole, who died on February 2, the Woman's Hospital receives \$5,000 for the endowment of a bed in perpetuity.

SENTENCE OF A STREET CAR CONDUCTOR. — On March 23, Albert Orenan, conductor of a Lexington Avenue street car, was sentenced to ten years in Sing Sing prison by Judge Foster, in the Court of General Sessions, for causing the death of Bernard McDonald, driver of a United States mail wagon. In passing sentence Judge Foster said to the defendant: "I have been reliably informed that it costs the Metropolitan Street Railway Company nearly \$2,000,000 a year to settle the damage suits resulting from

such carelessness and neglect of duty as you have been adjudged guilty of. And of far greater moment is the loss of life and limb and the suffering inflicted by such men as you. I will punish you heavily, in the hope that it will serve as a deterrent to others of your kind." At the time of the collision, Orenan was running the car in the place of the motorman, and the driver of the wagon was thrown to the ground and instantly killed. The family of McDonald accepted \$20,000 in settlement of their case against the company.

Obituary.

ROBERT OGDEN DOREMUS, A.M., M.D., LL.D.

By the death of Prof. R. Ogden Doremus, which occurred on March 22, New York loses a picturesque figure, long prominent in the scientific, social, literary and artistic life of the city. He was born in 1824 in the family home, at Broadway and Cortlandt Street, and from early manhood he took a leading part in all the developments in his native town along the line of his special objects of interest, chemistry, scientific education and music. His father was one of the founders of the University of the City of New York, and from that institution he was graduated both in arts and medicine. He then became assistant to Prof. John W. Draper in the chemical laboratory of the University Medical School. He also spent a considerable time in Paris in the study of chemistry and electro-metallurgy. In 1848 he equipped, with Charles Townsend Harris, a laboratory in the New York College of Pharmacy, in which he had been appointed Professor of Chemistry. He was one of the founders of the New York Medical College, of the Long Island College Hospital, and of Bellevue Hospital Medical College. In all of these he filled the chair of chemistry, urging in each school the necessity of the provision of a laboratory, where the students could have the opportunity of thorough chemical training. In the Bellevue College where he retained his professorship for many years, he was associated with that brilliant corps of teachers composed of such men as the Austin Flints, senior and junior, Van Beuren, James R. Wood, Fordyce Barker, Lusk, Sayre and Alexander Mott. Of this famous old Bellevue Faculty, but one member survives, the younger Flint, now Professor of Physiology in Cornell University Medical College. From 1853 to 1861 Dr. Doremus was Professor of Natural History at the Free Academy, now the College of the City of New York, and afterward was appointed to the chair of chemistry and physics in the same institution.

He made the laboratory at 234 Street and Lexington Avenue a noted center for study;

particularly in connection with electricity. He was always a very popular lecturer, not only on account of his remarkable command of language but also of the brilliant experiments with which he illustrated his remarks. On one occasion at the Academy of Music, in 1855, he took daguerreotypes of all the persons in the boxes by an arc light, and exhibited a spark six inches long from an induction coil, an extraordinary achievement in those days. He was also a notable figure in municipal affairs. He was the first toxicological expert to be called in New York in a murder case, and his services at the trial of James Stephens for poisoning his wife with arsenic led to improvements in the conduct of autopsies for the courts. For many years after this he was a well-known expert in criminal cases, and he was one of the first presidents of the Medico-Legal Society. He was a member of the Medical Advisory Board of the city, and assisted in the organization of the municipal department of health and the establishment of the Bureau of Chemistry in connection with the latter. In 1871 he was appointed president of a board for the examination of druggists and drug-clerks for licenses to practise pharmacy. He introduced the disinfection of ships by the use of chlorine, and thus did away with the necessity for prolonged detentions at quarantine. One of his important inventions was granulated, compressed gun-powder, the powerfulness of which greatly exceeded that of ordinary gunpowder. It was used by the French in the Franco-Prussian War and for the excavation of the Mont Cenis tunnel.

Dr. Doremis was interested in every department of culture and was the friend and patron of writers and of workers in all branches of the fine arts. No mean musician himself, he was especially prominent in musical circles. He was one of the founders of the Philharmonic Society, and for some time was its president. For many years he and his beautiful and accomplished wife maintained a delightful *salon* where one was sure of meeting the celebrities of the day. The Professor was an imitable *raconteur*, and always had a fund of pleasant reminiscences and good stories for the entertainment of his friends. Among his intimates were Tommaso Salvini and Christine Nilsson, and both these great artists maintained a correspondence with him up to the time of his death. Two or three years ago he celebrated his golden wedding. Since then his wife has died, and he is survived by four children, the oldest of whom is Prof. Charles A. Doremis.

burgh Asylum for the Insane, held on Monday Dr. T. S. Clouston, the physician-superintendent in submitting his report for 1905, said one of the most striking things in regard to the admissions from a medical point of view was the large number of cases of that terrible disease, general paralysis, and more striking was the comparative increase of this disease in the female sex among the poorer classes. When he was at the asylum as an assistant physician in the early sixties it was so uncommon a thing to have a woman admitted suffering from general paralysis that the medical staff would all go to see such a case. Last year there were thirty-eight women suffering from the disease, all except one being of the rate-paid class. For the first time in the history of the asylum the number of women with that disease exceeded the number of men. That was a bad sign of the moral status and mode of life of the class from which those patients came. He had become a convert to the microbial theory recently discovered by Dr. Ford Robertson and made public in his Morrison lecture in the College of Physicians. An increase was also shown in the number of cases due to alcoholic excess. The latest researches into the subject of heredity tended to prove that its results did not end with the one generation, but produced physical and mental degeneracy in the descendants of those who destroyed their reason by excess in drink. This melancholy phase of mental disease greatly prevailed during the year. Dr. Clouston believed that the great epidemic of influenza in 1889 and the subsequent lesser epidemic caused a lowering of the mental tone, and melancholy had been more common than before.

JOSEPH LEADY MEMORIAL.

At a meeting held recently by a number of public spirited citizens it was resolved to present to the city of Philadelphia, for a place upon the City Hall Plaza, a statue of Dr. Joseph Leady, in recognition of his memorable contributions to the natural sciences. Dr. Leady was universally recognized as one of the most distinguished figures which American science produced in the last century. His reputation was not alone national but international in character. Nevertheless, America has failed to show, in any practical way, an appreciation of his varied labors in the field of original research.

An appropriate statue can be erected for the sum of ten thousand dollars, \$10,000. Over one-half of this amount has been subscribed. It is proposed to raise the balance as speedily as possible.

Believing that many of Professor Leady's friends and admirers outside of Philadelphia will be glad to share in erecting this memorial, the committee in charge cordially invite co-operation in their undertaking.

Subscriptions may be sent to Dr. H. S. G. O. (treasurer, 514 Chestnut Street, Philadelphia).

Miscellaneous.

GENERAL PARALYSIS AMONG WOMEN.

From the weekly issue of the London *Times*, March 2, we take the following: "At the annual meeting of the Corporation of the Royal Edin-

RECORD OF MORTALITY FOR THE WEEK ENDING SATURDAY, MARCH 17, 1906.

| CITIES. | Reported deaths in each. | Deaths under five years. | CITIES. | Reported deaths in each. | Deaths under five years. |
|------------------------|-----------------------------|-----------------------------|-----------------------|-----------------------------|-----------------------------|
| New York | — | — | Quincy | 8 | — |
| Chicago | 555 | 173 | Waltham | 3 | — |
| Philadelphia | 591 | 173 | Gloucester | 10 | — |
| St. Louis | — | — | Pittsfield | 10 | — |
| Baltimore | 225 | 63 | Brookline | 4 | — |
| Cleveland | — | — | North Adams | 3 | — |
| Buffalo | — | — | Chicopee | 4 | — |
| Pittsburg | — | — | Northampton | 5 | — |
| Cincinnati | — | — | Medford | 5 | — |
| Milwaukee | — | — | Beverly | 5 | — |
| Washington | — | — | Hyde Park | 5 | — |
| Providence | 82 | 27 | Newburyport | 5 | — |
| Boston | 224 | 59 | Leominster | — | — |
| Worcester | 50 | 20 | Melrose | 4 | — |
| Fall River | 37 | 21 | Woburn | 4 | — |
| Cambridge | 28 | 7 | Marlborough | 2 | — |
| Lowell | 32 | 10 | Westfield | — | — |
| Lynn | 14 | 3 | Peabody | 3 | — |
| New Bedford | 34 | 16 | Revere | 3 | — |
| Springfield | 29 | 4 | Clinton | 12 | — |
| Lawrence | 26 | 15 | Attleboro | — | — |
| Somerville | 14 | 4 | Adams | — | — |
| Holyoke | 15 | 7 | Gardner | 4 | — |
| Brockton | 16 | 6 | Milford | — | — |
| Malden | 12 | 3 | Weymouth | 3 | — |
| Salem | 13 | 3 | Franklin | — | — |
| Chelsea | 13 | 3 | Watertown | 6 | — |
| Haverhill | 10 | 2 | Plymouth | — | — |
| Newton | 7 | 2 | Southbridge | 4 | — |
| Fitchburg | — | — | Wakefield | — | — |
| Taunton | 11 | — | Webster | — | — |
| Everett | 8 | 5 | | | |

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING MARCH 24, 1906.

- W. J. ZALESKY, assistant surgeon. Detached from the "Yankee" and ordered to the "New York."
- F. E. CAMPBELL, assistant surgeon. Detached from the "Newport" and ordered home to wait orders.
- E. M. BROWN, passed assistant surgeon. Orders of March 5 revoked; detached from the Naval Medical School, Washington, D. C., and ordered home to wait orders.
- C. C. GRIEVE, assistant surgeon. Detached from the "Frolic" and ordered to the "Winnington."
- J. FLINT, assistant surgeon. Ordered to the "Franklin."
- I. F. COHN, assistant surgeon. Ordered to the Naval Hospital, Norfolk, Va.

RECENT DEATHS.

DR. CHARLES LOUIS FINCKE, of Brooklyn, N. Y., died on March 19, in the thirty-third year of his age. He was born in Brooklyn and was a son of the late Col. Charles L. Fincke of the Twenty-second Regiment of the National Guard. Dr. Fincke was graduated from Yale in 1896, and from the Long Island College Hospital in 1899.

DR. JOHN P. HENRY, of Jersey City, N. J., died on March 15. He was graduated from the College of Physicians and Surgeons, New York, in 1881.

JOSEPH BYRON KINGSBURY, M.D., M.M.S.S., died in Holbrook, March 24, 1906, aged seventy-one years.

BOOKS AND PAMPHLETS RECEIVED.

Modern Materia Medica and Therapeutics. By A. A. Stevens, A.M., M.D. Fourth edition, thoroughly revised in conformity with the eighth revision (1905) of the United States Pharmacopoeia. Philadelphia and London: W. B. Saunders & Co. 1905.

Gall-stones and their Surgical Treatment. By B. G. A. Moynihan, M.S. (Lond.), F.R.C.S. Second edition, revised and enlarged. Illustrated. Philadelphia and London: W. B. Saunders & Co. 1905.

Dose-Book and Manual of Prescription-Writing with a List of the Official Drugs and Preparations, and Many of the Newer Remedies with their Doses. By E. Q. Thornton, M.D., Ph.G. Third edition, revised and enlarged. And adapted to the eighth revision (1905) of the United States Pharmacopoeia. Illustrated. Philadelphia and London: W. B. Saunders & Co. 1905.

The Dissociation of a Personality. A Biographical Study in Abnormal Psychology. By Morton Prince, M.D. New York, London and Bombay: Longmans, Green & Co. 1906.

The Management of a Nerve Patient. By Alfred T. Schofield, M.D. Philadelphia: P. Blakiston's Son & Co. 1906.

Surgical Nursing and the Principles of Surgery for Nurses. By Russell Howard, M.B., M.S. (Lond.), F.R.C.S. (Eng.) Illustrated. London: Edward Arnold, 1905.

Quiz-Compend. A Compend of Diseases of the Skin. By Jay F. Schamberg, A.B., M.D. Fourth edition, revised and enlarged. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1905.

Word-Blindness, with the Record of a Case Due to a Lesion in the Right Cerebral Hemisphere in a Right-handed Man; with Some Discussion of the Treatment of Visual Aphasia. By Charles K. Mills, M.D., and T. H. Welsenburg, M.D. Reprint.

Differential Diagnosis and Treatment of Disease. A Text Book for Practitioners and Advanced Students. By Augustus Caille, M.D. Illustrated. New York and London: D. Appleton & Co. 1906.

Trip to the "Land of the Midnight Sun." Summer of 1905. By Dr. Flavel B. Tiffany.

A Manual of Materia Medica and Pharmacology. Comprising all Organic and Inorganic Drugs which are or have been Official in the United States Pharmacopoeia, together with Important Allied Species and Useful Synthetics. Especially designed for Students of Pharmacy and Medicine, as well as for Druggists, Pharmacists and Physicians. By David M. R. Culbreth, Ph.G., M.D. Fourth edition, enlarged and thoroughly revised. Illustrated. Philadelphia and New York: Lea Brothers & Co. 1906.

Urinary Analysis and Diagnosis by Microscopical and Chemical Examination. By Louis Heitzmann, M.D. Second revised and enlarged edition. Illustrated. New York: William Wood & Co. 1906.

Prostatitis without Enlargement of the Prostate. Its Diagnosis and Treatment. By Charles H. Chetwood, M.D. Reprint.

Recent Experiences in Kidney Surgery and the Utility of Diagnostic Aids. By Charles H. Chetwood, M.D. Reprint.

A Manual and Atlas of Orthopedic Surgery. Including the History, Etiology, Pathology, Diagnosis, Prognosis, Prophylaxis and Treatment of Deformities. By James K. Young, M.D. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1905.

Man and his Poisons. A Practical Exposition of the Causes, Symptoms and Treatment of Self-Poisoning. By Albert Abrams, A.M., M.D. (Heidelberg), F.R.M.S. Illustrated. New York: E. B. Treat & Co. 1906.

The Food Factor in Disease. By Francis Hare, M.D. Vols. I and II. New York, London and Bombay: Longmans, Green & Co. 1905.

Baumgarten's Jahresbericht. Neunzehnter Jahrgang. 1903.

A Textbook of Pharmacology and Therapeutics, or the Action of Drugs in Health and Disease. By Arthur R. Cushny, M.A., M.D. (Aberd.) Fourth edition, thoroughly revised. Illustrated. Philadelphia and New York: Lea Brothers & Co. 1906.

Thirty-fifth Annual Report of the Secretary of State on the Registration of Births and Deaths, Marriages and Divorces, in Michigan for the Year 1901. Lansing, Mich. 1905.

Refraction, including Muscle Imbalance and the Adjustment of Glasses. By Royal S. Copeland, A.M., M.D., and Adolph E. Ibershoff, M.D. Illustrated. Philadelphia: Boericke & Tafel, 1906.

A Manual of Bacteriology. By Herbert U. Williams, M.D. Revised by B. Mende Bolton, M.D. Fourth edition, revised and enlarged. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1905.

Massage and the Original Swedish Movements: their Application to Various Diseases of the Body. By Kurze W. Ostrom. Sixth edition, revised and enlarged. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1905.

Department of the Interior. Bureau of Government Laboratories. Biological Laboratory. Intestinal Hemorrhage as a Fatal Complication in Amoebic Dysentery and its Association with Liver Abscess. By Richard P. Strong, M.D. The Action of Various Chemical Substances upon Cultures of Amoeba. By J. B. Thomas, M.D. Biological and Serum Laboratories. The Pathology of Intestinal Amoebiasis. By Paul G. Woolley, M.D., and W. E. Musgrave, M.D.

On the Nature, Causes, Variety and Treatment of Bodily Deformities: in a Series of Lectures delivered at the City Orthopedic Hospital in the year 1852 and subsequently. By the late E. J. Chance, F.R.C.S. (Eng.) Edited by John Poland, F.R.C.S. (Eng.) Second edition. Illustrated. In two volumes. Vol. I. London: Smith, Elder & Co. 1905.

Original Articles.

THE MENTAL SYMPTOMS OF CEREBRAL TUMOR.*

BY PHILIP COOMBS KNAPP, A.M., M.D.,

Clinical Instructor in Diseases of the Nervous System, Harvard Medical School; Physician for Diseases of the Nervous System, Boston City Hospital.

The older writers upon the mental symptoms of tumor of the brain made various estimates of their relative frequency. Andral¹ in 13 cases and Durand-Fardel² in 70 cases found that such symptoms were very rare and thought that they should be regarded as exceptional. Nasse,³ however, found mental symptoms in 19 out of 50 cases, Friedreich⁴ in 19 out of 44 and Lebert⁵ in 29 out of 90, while Ladame⁶ in 1865 noted them in 112 out of 331 collected cases—a proportion of from one third to two fifths. Calmeil⁷ made the curious observation that while mental disturbances occurred in over one half the cases of cancer of the brain, they were rare in tubercle, an hypothesis which subsequent investigations have not confirmed. Some years later Bernhardt⁸ found that in more than half of the tumors of the cortex and lobes there were mental symptoms.

In later years the frequency with which mental symptoms occur is regarded as somewhat greater. Giannelli⁹ found them in 323 out of 588 collected

In the last edition of his *Lehrbuch*¹⁰ Oppenheim says that we may consider it the rule that the sensorium is not unaffected at the height of the disease,—a somewhat more liberal estimate than is indicated in his monograph¹¹ in Nothnagel's system.

It is possible that some of the earlier estimates, like Andral's, were due to the failure to lay sufficient stress upon the minor mental disturbances. Attempts have actually been made to estimate the frequency of mental disturbances by an inquiry into the frequency with which tumors are found at the autopsies of the insane. Fischer¹² found a new growth only once in 318 autopsies, but Leubuscher¹³ found a growth four times in 350 autopsies, and Blackburn¹⁴ 29 times in 1642 autopsies, which is not quite as frequently as I have found tumors in autopsies of patients not insane (101 in 5069 autopsies at the Boston City Hospital).

I have made an attempt to estimate the frequency of mental symptoms in cases of tumor of the brain from a study of the clinical history of 104 cases in which a growth of some nature was found at the autopsy. All but two of these cases are taken from the records of the Boston City Hospital. Many of them came under my own observation, and 39 of them have already been reported in a monograph published some years ago.¹⁵ For the rest, I am indebted to the

TABLE I.

| | Grand Total. | With mental symptoms. | Whole number considered. | With mental symptoms. | With early mental symptoms. |
|---------------------------------------|--------------|-----------------------|--------------------------|-----------------------|-----------------------------|
| Frontal | 8 | 6 | 6 | 5 | 3 |
| Central | 8 | 7 | 1 | 1 | 2 |
| Parietal | 2 | 2 | 2 | 2 | 1 |
| Occipital | 1 | 1 | 2 | 2 | 1 |
| Temporal | 7 | 7 | 6 | 6 | 5 |
| Corpus callosum | 1 | 1 | 3 | 3 | 3 |
| Corpus striatum | 17 | 13 | 9 | 9 | 1 |
| Corpus quadrigemina and pineal gland. | 3 | 3 | 3 | 3 | 3 |
| Pons | 6 | 1 | 1 | 1 | 0 |
| Cerebellum | 10 | 7 | 7 | 6 | 1 |
| Hypophysis | 3 | 2 | 2 | 2 | 1 |
| Base, anterior fossa | 5 | 5 | 5 | 5 | 2 |
| Base, middle fossa | 1 | 1 | 1 | 1 | 0 |
| Base, posterior fossa | 2 | 1 | 1 | 0 | 0 |
| Multiple | 21 | 13 | 11 | 8 | 2 |
| Not stated | 1 | 1 | 1 | 1 | 0 |
| Total | 104 | 79 | 61 | 58 | 28 |

cases, but he reckoned all cases with speech disturbance among the mentally disturbed. Schuster¹⁶ estimated that 50 to 60% of all cases showed some such disturbance. Bramwell¹⁷ believes that the great majority of cases show mental symptoms, and Bruns¹⁸ holds that only rarely, when the growth is very small or has some special situation, is mental disturbance entirely absent.

* Read at the thirty-first annual meeting of the American Neurological Association at Philadelphia, June 1, 1905.

¹ Cited by Ladame.

² *Lehrbuch der Symptomatologie und Diagnostik der Hirnkrankheiten*, 1868.

³ *Lehrbuch der Symptomatologie und Diagnostik der Hirnkrankheiten*, Berlin, 1881.

⁴ Giannelli, *Gli effetti diretti ed indiretti dei tumori cerebrali sulle funzioni mentali*, II. *Pubblicazioni*, 9, 1, 15 July, 1897.

⁵ Schuster, *Psychische Störungen bei Hirntumoren*, Stuttgart, 1902.

⁶ Bramwell, *Intracranial Tumors*, Edinburgh, 1908.

⁷ Bruns, *Die Geschwülste des Nervensystems*, Berlin, 1897.

kindness of my colleagues at the hospital for the privilege of citing them here.

In these 104 cases, mental disturbances sufficient to attract attention were noted in 79, a little over 75% of the cases. On further study, however, and on applying a rigorous criterion, a large number will have to be excluded. In less than 14 cases the tumor, although of considerable size, was but one manifestation of a widespread disease of the brain, and therefore mental symptoms coexisted. In 1 case there was marked

⁸ Oppenheim, *Lehrbuch der Neurologie*, 1907, 4, 1, 1, 1.

⁹ Oppenheim, *Lehrbuch der Neurologie*, 1907, 4, 1, 1, 1.

¹⁰ Oppenheim, *Lehrbuch der Neurologie*, 1907, 4, 1, 1, 1.

¹¹ Oppenheim, *Lehrbuch der Neurologie*, 1907, 4, 1, 1, 1.

alcoholism; in other cases the new growth was congenital (chordoma) or insignificant, or there were complicating diseases,—Bright's disease, typhoid fever and the like,—or the patient was brought to the hospital unconscious, and no history of the previous condition could be obtained. Such cases, 40 in all, have been excluded, even though it seemed probable that the symptoms of tumor and the symptoms of intercurrent disease might fairly be differentiated.

In the 64 cases remaining, mental symptoms were noted 58 times, a trifle over 90%. In considering these figures, many things must be borne in mind. The patients were hospital cases, often ignorant and stupid, often of foreign birth, with no friends or relatives at hand to give an intelligent history of their previous condition. Under such circumstances it is by no means easy to determine whether there has been any change in the mental condition, especially when the mental level is normally low. Furthermore, we must admit regretfully that hospital records are often defective, and that the house officers sometimes fail to report, or even to note, important symptoms. The patients, moreover, came under the care of different physicians, and sometimes were seen only cursorily, if at all, by the neurologists of the hospital. Finally, we lack a definite and generally accepted method of examination of the mental condition of the average patient, such as we have for determining sensation, motion or reflex activity. It would therefore not be surprising if the slighter mental changes should sometimes escape observation. It is surprising to me, however, that under such adverse conditions mental disturbances should be so frequently recorded, and it goes far to strengthen the opinion I expressed some fourteen or fifteen years ago¹² which Oppenheim¹³ possibly regarded as extreme, "that in every case some change can be found by a competent observer who has known the patient intimately before; in other words that there can be no gross lesion in the brain without some disturbance, greater or less, in the psychical functions."

A case under my observation a few months ago will illustrate this point. The symptoms pointed very definitely to a tumor in the occipital lobe, but no autopsy could be obtained. The patient was a young man of unusual mental attainments, who had won high honors at two great universities. He was of a high-strung, intense, poetical nature. On many occasions it seemed as if there were no mental impairment whatever, but closer study revealed almost invariably a readily induced exhaustion of the brain, so great at times as to compel a cessation of inquiry, or even of ordinary conversation. With this was associated an exaggerated emotional instability and a good deal of mental depression. The latter, however, might be regarded as natural under the depressing conditions. He had a quadrant hemianopsia, but under ordinary conditions there was no sign of any psychical blindness. Under the excitement,

however, of an examination by a strange physician, he was temporarily unable to give the names of ordinary objects exposed to his view. Yet later, when free from excitement, he could do so normally.

Mental disturbance as the result of a cerebral lesion is what we might fairly expect *a priori* from our knowledge of the anatomy and functions of the brain. Anatomically we know that the brain is a mass of interconnected neurones, each one of which is in contiguity with many others and may be aroused through many different chains of neurones. If even a small group of neurones be obliterated by disease, there are some lines of nervous conduction in which a link is broken and the mental processes become just so far defective or slow in operation. If the single factor of its characteristic smell be eliminated from our concept of an orange, our mental patrimony becomes just so much the poorer. "Any destructive focal lesion of the brain," says Bianchi¹⁴ in his recent admirable treatise on psychiatry, "must also have as an effect a diminution of the mental patrimony and of the vigor of the personality in some direction." With small lesions, however, especially if located in certain regions of the brain, such disturbance might be insignificant and might not be detected by our present methods of clinical research.

We must also recognize the fact that there are certain growths which are apparently unattended with any cerebral symptoms whatsoever. The chordoma, one of which is included in my series, is a congenital growth and apparently gives rise to no symptoms in the few recorded cases where it has been found. Osteophytes in the skull and psammomata may sometimes attain considerable size without giving rise to any disturbance; the same is also true of the small cysts which develop in the choroid plexus. Furthermore, we occasionally meet with growths which are inclosed in a calcified capsule where no history of cerebral trouble can be elicited. Nine of the cases in the present series may be classed under one or the other of these various types and may fairly be excluded from consideration. They all entered the hospital for some other disease, the symptoms were not cerebral, and the tumor was discovered only at the autopsy. Various cases are on record where the presence of a large tumor was not suspected during life, and where the cerebral symptoms were absent or insignificant. In the present series of cases, however, there were no instances where a large growth existed without cerebral symptoms, although there was often a question whether those symptoms were due to the growth or to intercurrent disease. The statement which I have made above, therefore, needs a little modification to this effect, that in every case of brain tumor presenting any cerebral symptoms, some mental symptoms can probably be discovered, — at least by a competent observer who has known the patient intimately before.

The cases here under consideration, however,

¹² Кларк: *Op. cit.*, p. 41.

¹³ Oppenheim: *Die Geschwülste des Gehirns*, p. 52.

¹⁴ Bianchi: *Trattato di Psichiatria*. Naples, 1901-1904, p. 786.

were, of course, seen in the terminal stages of the disease, a few weeks, or sometimes a few days, before death. One of them, which only recently came to autopsy, came under my personal observation over two years before. At that time the mental symptoms were insignificant, but in the last year of his life, after he had been trephined, they developed to such an extent that he became suspicious, deluded and violent, developed hallucinations of sight and hearing, and had to be committed to an insane asylum. Later, he grew quieter, and for some months before death was dull and stupid, gradually becoming comatose in the weeks preceding death. In this case the optic nerve presented analogous conditions. So long as he was under my observation, no neuritis could be discovered, but after he had been trephined, I learned that he became almost totally blind. The mental symptoms were observed comparatively early in the progress of the disease in 28 of the 64 cases. The importance of the early onset of such symptoms with reference to the location of the growth, can be more advantageously discussed later, when we consider the relation between the symptoms and the seat of the growth.

In regard to the nature of the mental symptoms occasioned by a new growth within the skull the prevalent opinion has been that expressed by Oppenheim and Bruns, that there is a steadily progressing stupidity, beginning as somnolence and mental torpor, and eventually going on to stupor and coma. They both recognize the occasional occurrence of other mental conditions, such as melancholia, hallucinatory excitement, simple dementia, delirium, etc., as well as the peculiar form of mental weakness associated with a childish propensity to jest (Witzelsucht, moria puerilis), but Oppenheim regards them as rare, and Bruns believes that when specific psychoses occur they are to be regarded as due to pre-disposition, and not caused by the new growth. Dupré¹⁰ describes the characteristic mental condition as one of dullness of the intellect, affective torpor and inertia of the will, with occasionally ambulatory automatism. He lays especial stress upon a state of puerilism manifested by an infantile character of the psychical reactions, with various modifications of the affective tone—depression or excitement, often associated with the childish joviality above mentioned. Giannelli, however, has pointed out clearly that the mental symptoms of tumor of the brain may be varied and manifold, and this opinion has been confirmed by the exhaustive study of Schuster.

Schuster, as a result of a study of 775 collected cases, found that the conditions of simple mental weakness, dullness, sopor and dementia were present in 124 cases, while 352 cases presented some active symptoms which were classified as follows:

| | |
|---|----|
| Symptoms similar to those of general paralysis, | 20 |
| Symptoms similar to those of chronic paranoia, | 19 |
| Symptoms similar to those of melancholia and depressive states, | 57 |

| | |
|---|----|
| Lachrymose with mental weakness, | 3 |
| Depression with great irritability, | 1 |
| Mental symptoms as in neurasthenia and hysteria, | 15 |
| Mental symptoms as in mania, | 13 |
| Euphoria, Witzelsucht, moria, hypomania, | 23 |
| Irritability, "epileptic character," maniacal and similar states, | 95 |
| Unrest, anxiety, | 1 |
| States with confusion and hallucinatory delirium, | 52 |
| States similar to Korsakow's psychosis, | 2 |
| States similar to moral insanity, | 7 |
| States with impulsive acts, | 3 |
| Circular states, | 5 |
| "Mental weakness with states of excitement," | 10 |
| State as in senile dementia, | 1 |
| Unclassified, | 16 |

His investigations prove, therefore, that the conditions of stupor and mental torpor, although they are present in a greater proportion of cases, are not in such an overwhelming majority as the statements of Bruns, Oppenheim and Dupré would imply, and that specific psychoses are sufficiently common to cast some doubt upon Bruns's statements.

My own investigations would agree in the main with those of Schuster, although I have found a lesser proportion of certain states than he has given. The largest number of cases, thirty-one in all, presented the recognized type of mental failure and dullness. The patients exhibited various degrees of languor, somnolence, dullness, apathy, mental torpor, failure of memory, and a general failure of all the mental functions, ending usually in complete stupor and coma. In the earlier stages it was sometimes noticeable, as has been observed by so many other writers, that when aroused by sufficiently powerful stimuli, the mental processes could be performed clearly and correctly, but with unusual slowness.

Seven cases showed noticeable mental confusion and disorientation, with mental failure, failure of memory, irrelevancy in speech, mild mental wandering, somnolence, stupidity and a dazed mental condition.

In fifteen cases the mental impairment went on to actual states of delirium, which became wildly maniacal in three patients and which demanded restraint in several others. Actual hallucinations were occasionally noted. In these delirious states there was also mental failure, confusion, disorientation, failure of memory and often more or less stupor, mental slowness, incoherence and vague and unsystematized delusions.

Neurasthenic and hysterical states were occasionally noted in the earlier stages of the disease, but, with a single exception, there eventually developed more marked mental disturbances, so that the cases were eventually classified under one or another of the divisions given above. The diagnosis of hysteria or neurasthenia was indeed occasionally made at first by other physicians, although not quite as frequently as I have known it to be made in private practice. One or two patients who afterward became much deteriorated at first showed the scrupulousness and quiet feelings so common in the neurasthenic condition, while others showed the emotional instability of hysteria.

¹⁰ Dupré, *Psychopathes organiques*. Bailet Traité de pathologie mentale, Paris, 1903.

Vague and unsystematized delusions were occasionally noted in the confusional and delirious states, but in only two cases were there definite delusions of persecution of a somewhat systematic character. One of these had also well marked hallucinations of sight and hearing. Only one case presented symptoms of marked mental depression unattended by any mental failure or confusion. The normal depression, natural upon the appreciation of the disease, must of course be omitted from category. One patient also, whose case I reported some years ago,¹⁶ presented a fairly typical picture of general paralysis. The condition of childishness, *puerilisme*, emphasized by Dupré, was noted exceptionally, but true Witzelsucht was not observed. I have seen it in one or two cases of probable tumor in private practice, but in my experience it is a rare phenomenon in cases of brain tumor. It is, however, not uncommon in cases of incipient general paralysis.

I found no very striking differences as to the period of the disease at which the different types of mental disturbance developed. The mental symptoms were of early onset in about half of all the cases, 28 in 58, and they were also of early onset in about half of each of the three main groups, stupor (13 in 31), confusion (4 in 7) and delirium (8 in 16). One distinction, however, must be made. Although some mental symptoms appeared early in the course of the cases which became delirious, the delirium was usually a later feature. Confusion, mental dullness, somnolence and the like characterized the earlier stages; delirium, violence and profound stupor, the later stages.

Turning now to the question of the relation between the seat of the tumor and the mental symptoms, it may be well first to deal with two general questions in regard to the relative position and size of the growth before we consider in detail the exact localization.

Schuster has found that in the collected cases of tumor with mental symptoms, the growth was located in a much larger proportion of the cases on the left-hand side of the brain, excepting with tumors of the temporal lobe, where the proportions were about equal. In the frontal and occipital regions there were about four tumors on the left to three on the right, while in the central and parietal regions the left-sided tumors were about twice as numerous. This agrees with Phelps's¹⁷ study of brain injuries, in which mental symptoms were much more frequent in injuries of the left frontal lobe than of the right. My own cases do not support these conclusions. Of the cases involving the cerebral lobes, only 11 were on the right and 9 on the left side, and the only one of these 20 cases where no mental symptoms were recorded was on the left side. Taking all the 64 cases, 28 were on the right side and 29 on the left, and of those without recorded mental symptoms, 3 were on the left side and none on the right.

¹⁶ Knapp: *Op. cit.*, p. 71, case xiv.

¹⁷ Phelps: *Traumatic injuries of the brain and its membranes*. New York, 1897.

In regard to the size of the tumors it is obvious that a large growth is likely to give rise to more mental, as well as other symptoms, than a small one, and the resultant symptoms are, of course, apt to be more pronounced. I have arbitrarily divided my cases into three classes, — large, where the growth was over two centimeters in diameter, medium, from one to two centimeters, and small, below a centimeter. Following this classification, the cases may be arranged as follows:

| | |
|--------------------------------|------------------------------|
| Cases with mental symptoms, | 31 large, 21 medium, 5 small |
| Cases without mental symptoms, | 2 " 3 " 1 " |
| Cases rejected, | 7 " 13 " 20 " |
| Total, | 40 " 37 " 26 " |

In one instance the size of the growth was not stated. In other respects the table gives us no very definite date, and gives no special support to our *a priori* conclusions.

Coming now to the special problem of the relation of the mental symptoms to the special regions of the brain, it may be well first to reproduce the three following tables from Schuster. In the first he gives the scale of frequency with which the different regions are affected by tumors in general, as follows:

| | |
|------------------------------------|------|
| Cerebellum, | 21.6 |
| Multiple, | 14.7 |
| Frontal, | 12.1 |
| Central, | 12.0 |
| Brain stem and crura, | 9.9 |
| Basal ganglia and ventricles, | 7.0 |
| Occipital, | 4.3 |
| Temporal, | 3.9 |
| Hypophysis, | 3.8 |
| Medulla oblongata, | 3.4 |
| Parietal, | 3.3 |
| Corpora quadrigemina and parietal, | 3.1 |
| Corpus callosum, | 2.5 |

In the second he gives the relative percentage with which the different regions are affected in cases with mental symptoms.

| | |
|-------------------------------|------|
| Frontal, | 18.8 |
| Multiple, | 18.6 |
| Cerebellar, | 10.6 |
| Hypophysis, | 7.0 |
| Basal ganglia, ventricle, | 6.9 |
| Brain stem, crura, | 5.9 |
| Temporal, | 5.8 |
| Central, | 5.2 |
| Corpora quadrigemina, pineal, | 5.0 |
| Occipital, | 4.3 |
| Corpus callosum, | 4.0 |
| Parietal, | 2.4 |
| Medulla oblongata, | 2.3 |

In the last he shows the percentage of mental disturbances in 100 cases in any given region.

| | |
|-------------------------------|-------|
| Corpus callosum, | 100.0 |
| Frontal, | 79.3 |
| Temporal, | 66.6 |
| Hypophysis, | 65.3 |
| Occipital, | 60.0 |
| Multiple, | 59.6 |
| Corpora quadrigemina, pineal, | 53.8 |
| Parietal, | 52.1 |
| Basal ganglia, ventricle, | 50.0 |
| Cerebellum, | 35.5 |
| Central, | 28.8 |
| Brain stem, crura, | 25.0 |

Schuster moreover is inclined to the belief that the type of mental disturbance is dependent to some degree, at any rate, upon the location of

the growth. The more active mental disturbances are more frequent in tumors of the frontal, temporal and occipital lobes; the forms of simple mental failure in callosal and parietal tumors. Cases presenting the symptoms of moral insanity and general paralysis are commoner with frontal tumors, cases of the neurasthenic, hysterical or hypochondriacal type with frontal or parietal tumors, while cases of the type of paranoia and mania are rare in frontal tumors; and cases of confusion and delirium occur less often in frontal tumors than elsewhere, and are especially common in occipital growths. He agrees with other recent authors in the opinion that Witzelsucht occurs in tumors of any region, not exclusively in frontal tumors, and believes it is dependent somewhat upon the size of the growth.

Giannelli, drawing conclusions very probably from many of the same cases as those collected by Schuster, agrees with him in assigning special importance to tumors of the frontal lobe and corpus callosum in the production of mental symptoms. His conclusions are as follows: (1) Hallucination, when it exists, indicates an irritation of the corresponding cortical sensory center, although we cannot affirm with absolute certainty that the neoplasm is in the immediate vicinity of that center. (2) The more the mental disorders — torpor, intellectual arrest, weakness of memory — are manifested at the beginning of the morbid process, the more likelihood there is that the neoplasm is in the frontal lobe and especially the prefrontal region. (3) Tumors of other lobes or in other parts of the encephalon exhibit the mental disorders above mentioned later in the course of the disease; but, when the mental disorders do appear, they do not differ materially from those manifested by tumors of the frontal lobe, excepting that tumors in the speech area may produce the form of dementia characteristic of aphasic disturbances. (4) These mental disorders indicate a more or less intense and more or less diffuse alteration of the cortical morphological elements. (5) Tumors of the corpus callosum are always (2) accompanied by mental disturbances. (6) The modifications of sentiment, which may develop in the course of a cerebral tumor, have no localizing value. (7) When a cerebral tumor presents the syndrome of general paralysis it is very probably in the frontal lobe. (8) When ideas of grandeur develop in the course of a cerebral tumor, the tumor is probably in the frontal lobe. (9) Witzelsucht is indicative of a tumor in the frontal lobe, probably on the right side. (10) Marked alterations of character, with irritability, violence, insolence, obscenity, threats, indicate a frontal growth. (11) When, in the course of a cerebral tumor, there are exhibited disordered actions of a higher order (forced actions with consciousness) the growth is most probably near the psycho-motor zone, and preferably in the frontal lobe.

In spite of the importance ascribed to tumors of the frontal lobe in the production of mental symptoms, by both Giannelli and Schuster, and

in spite of the corroborative evidence both on the clinical side and from animal experimentation, Müller¹⁹ has contested the generally accepted opinion that the frontal lobes are associated with the higher psychical functions. Although Müller's arguments are somewhat plausible, I do not think that he has succeeded in controverting the great mass of evidence that has been collected which ascribes to the frontal lobes an important part in the mental processes, although they are in no sense to be regarded as the sole psychical centers. The integrity of the mind must depend upon the harmonious functioning of many regions of the cerebral cortex, and the analysis of even a simple concept will almost invariably show that it is the result of the combination of many sensory processes which demand unbroken links of succession between several widely separated sensory regions. The occipito-temporal region, and especially the zone of language, must play an extremely important part in our ideational processes, and the probability that the corpus callosum is a huge mass of association fibres renders its integrity also important. It is readily conceivable, assuming that a given association tract with a definite function runs from the occipital lobe through the corpus callosum to the opposite frontal lobe, that a lesion in any one of the three regions might break the conduction and give rise to the same phenomena of deficit, just as a lesion anywhere from the cuneus to the chiasma may give rise to the same symptom of deficit, hemianopsia. It is not unlikely that disturbances in the higher visual centers in the occipital region in Flechsig's posterior association center, may be responsible for much of the disorientation of confusional states, for example, and that the special phenomena of attention and many of the ideas of personality are dependent upon associated processes in the frontal lobes, but this is still undetermined, and the cases at present under consideration unfortunately give no definite information upon the subject.

Coming now to the cases that I have collected and considering them in detail, five of the six cases of tumor of the frontal lobe, or, to speak more accurately, of the prefrontal portion thereof, exhibited signs of mental disturbance. In all cases this disturbance was simple mental failure with marked dullness, but in only three of the cases was it noted as being among the early symptoms. The only case where no mental symptoms were noted was a sarcoma the size of an English walnut at the foot of the left second frontal convolution near the precentral sulcus and has already been reported.²⁰ It is curious that this is the only case of tumor of the pre- or paracentral or hemispherical in which no mental symptoms were recorded, but mental dullness may readily have been overlooked, as the patient was in bed for a number of weeks, complaining constantly of intense headache and therefore being averse to any attempts at conversation.

¹⁹ Müller, *Die Lokalisation der Seelenkräfte nach der neueren Lehre*, 1901, Verlag von J. Neumann, Neudamm. *Deutsche Zeitschrift für Neurologie*, vol. 17, 1902.

²⁰ Knapp, *Op. cit.*, 47, case III.

Of four tumors in the Rolandie region, two presented symptoms of mental dullness early in their course, a third, later in the disease, was noisy and delirious, and the fourth, to which I have already referred, finally developed hallucinations and delusions of persecution.

One of the two parietal cases presented neurasthenic symptoms early in the disease. The other became dull and stupid toward the close.

There were six temporal tumors. Two of these were mentally dull, two confused, one delirious, and one presented a typical picture of general paralysis. One of the dull cases did not show much mental change until late in the disease. In all the rest, the mental symptoms were of early occurrence.

The only case of tumor of the pons was mentally dull.

Five out of seven cerebellar tumors were mentally dull, but only one showed this mental failure early. The sixth was delirious. In the seventh case no mental symptoms were noted, but she had headaches with intense vertigo, aggravated by any effort, so that mental symptoms may well have been overlooked.

One tumor of the hypophysis showed mental confusion early in the disease. The second was delirious toward the close.

Of the seven tumors at the base of the brain, five were in the anterior fossa. Of these, one became dull early, three showed mental confusion later in the disease, and a fifth was delirious, show-

TABLE II.*

| | Total | Total with mental symptoms | Dull stupor | Confused | Delirious | Paranoid | General paralysis | Melancholia | Neurasthenia |
|--|-------|----------------------------|-------------|----------|------------|----------|-------------------|-------------|--------------|
| Frontal | 6 | 5 iii | 5 iii | | | | | | |
| Central | 4 | 4 ii | 2 ii | | 1 | 1 | | | |
| Parietal | 2 | 2 i | 1 | | | | | | 1 i |
| Occipital | 2 | 2 i | 1 i | | 1 | | | | |
| Temporal | 6 | 6 v | 2 i | 2 ii | 1 i | | 1 i | | |
| Corpus callosum | 3 | 3 iii | | | 3 iii | | | | |
| Optico-striate | 9 | 9 iv | 7 ii | | 2 ii | | | | |
| Corpora quadrigemina and pineal gland, | 3 | 3 iii | 2 ii | | | 1 i | | | |
| Pons | 1 | 1 o | 1 | | | | | | |
| Cerebellum | 7 | 6 i | 5 i | | 1 | | | | |
| Hypophysis | 2 | 2 i | | 1 i | 1 | | | | |
| Base, anterior fossa | 5 | 5 ii | 1 i | 3 | 1 i | | | | |
| Base, middle fossa | 1 | 1 o | | | 1 | | | | |
| Base, posterior fossa | 1 | 0 o | | | | | | | |
| Multiple | 10 | 7 ii | 3 | 1 i | 3 i | | | 1 | |
| Not stated | 1 | 1 o | 1 | | | | | | |
| Total | 64 | 58 xxviii | 31 xiii | 7 iv | 15 viii | 2 i | 1 i | 1 i | 1 i |

* Cases with early mental symptoms in Roman numerals.

Every one of the three callosal tumors showed mental symptoms early in the disease, and all became confused, delirious, violent and demented. One case had had hallucinations.

Seven out of nine cases of a growth in the optico-striate region were mentally dull, but only two showed this symptom early. Two other cases showed early mental symptoms, and both became delirious, requiring restraint, one being wildly maniacal.

Two cases of tumor of the corpora quadrigemina became dull early, and the third also showed early mental impairment, with delusions of persecution. One of them manifested early various neurasthenic symptoms, scrupulosity and a sense of unworthiness, later growing demented.

ing mental disturbances early. One tumor in the middle fossa became delirious later in the disease. In only one case of a tumor in the posterior fossa, a growth of the cerebello-pontine angle, not involving the brain deeply, there were no noteworthy mental symptoms.

Eleven tumors were classed as multiple, but two other cases might fairly be regarded as in this class, one a multiple growth in the optico-striate region, the other a multiple growth in the pons. They have, however, already been considered under the other headings as the growths were close together. Three of these eleven cases showed mental failure late in the disease. One was confused early, and three were delirious. One of them showed mental disturbances early.

One was mentally depressed. Of the three cases where no mental symptoms were recorded, two were under observation a very short time, one dying suddenly with cysticerci in the brain, the other dying suddenly of surgical shock. A third case, with multiple gliomata in the basal ganglia has already been reported.²⁰

In one other case with mental failure the autopsy record of the findings in the brain was lost, the only note being "glioma of brain."

Since mental symptoms were so frequent, no matter in what part of the brain the tumor was located, and since the failure to note such symptoms in a few cases is susceptible, for the most part, of explanation on other grounds than by the assumption that mental symptoms did not exist, the series of cases here presented can hardly give much support to any theory which seeks to establish one special psychical center in the brain. If, however, we study the cases according to the period of development of the mental symptoms, it may, perhaps, be of greater advantage.

If we note the early development of the mental symptoms as shown in the final column of table I, the relative importance of the different regions of the brain in regard to psychical functions becomes more pronounced. In every case of tumor of the corpus callosum or tumor of the corpora quadrigemina the mental symptoms were of early development. This is in accordance with the other data which indicate that callosal tumors are most frequently attended with mental symptoms on account of the important part played by the corpus callosum in the processes of association. Growth involving the region of the corpora quadrigemina and pineal gland are usually attended with marked dilatation of the lateral ventricles on account of the blocking of the *iter a tertio ad quartum ventriculum*. They thus give rise early to a marked increase of intracranial pressure which might favor the early onset of mental disturbances. Next in importance to these regions in favoring the early onset of mental symptoms come the temporal and frontal lobes. A study of these cases, in fact, has led me to believe that the temporal lobe, apart from its association with the function of speech, has perhaps as important a share in the psychical functions of the brain as the frontal lobe. The other regions of the prosencephalon, with the optic-atriate region and the hypophysis, come next and the brain stem plays a less important part.

The pathogenesis of the mental symptoms in cases of cerebral tumor is susceptible of various explanations. The mental disturbance may be regarded as a focal symptom, either of defect or irritation, due to the destruction or irritation of certain centers which have especial psychical functions; or it may be a general symptom, due either to the increased intracranial pressure or to the formation of certain toxins in the brain either from the new growth itself or by the disturbance in circulation caused by the growth.

From a study of these cases we have found that the most common psychical states are those of

confusion, delirium and mental stupor or dementia. These states often co-exist, or at least are often present in successive stages of the same case, in mental diseases due to causes other than tumor. This is especially true of the toxic and infectious psychoses, or of the various mental affections which Bianchi has brought under the one comprehensive heading of sensory phrenosis. Persistent hallucinations, obsessions, phobias and limited systematized delusions with a clear sensorium and fairly active intellectual processes were notably rare. It is fair to assume that these later syndromes are dependent upon some derangement in a definite group of association neurones, limited, it may be, in number, but possibly having connections with one another over a wide cortical area. A new growth may disturb some of these groups in its initial stage, but as it increases in size, especially in the case of a growth so large as to involve several cortical regions and the basal ganglia as well, so that its regional classification becomes a problem, the mental symptoms will become more general and widespread. While it seems probable that the functions of certain areas, notably the frontal and temporal lobes, are especially of a complex psychical nature, and that those areas are especially to be considered as psychical association centers, and that the corpus callosum is to be regarded as a vast association tract connecting various association centers, it is not strange if a good-sized lesion in one of those centers should disturb many groups of associated neurones and lead to more diffuse psychical disturbances. In studying the early development of mental symptoms I have already indicated the relative importance of certain areas in the possible production of such symptoms, but the fact that mental symptoms may arise from a growth anywhere within the cranium forces upon us the conclusion that other factors beside the location are of importance in their production.

Vigouroux²¹ has maintained that there is no special region of the brain which elaborates intelligence, but that the intellectual function requires the co-operation of all parts. He thinks that a diffuse alteration of the cortex is requisite to produce obtundation, confusion and dementia, and that when these symptoms occur they are due not to the growth alone, but to compression, chronic meningitis, and the formation of toxins. Gannelli, indeed, has demonstrated the existence of these diffuse changes in a number of cases of tumor, finding changes in the cells and disappearance of tangential fibres in all parts of the brain.

The factor of pressure is undoubtedly of great importance. We know that pressure will inevitably lead to a dilution of all the cerebral functions. Levasseur²² has tried to show that the habitual mental symptoms of tumor are obtundation, confusion and weakening of the intellect, and that these are due to compression of

²⁰ Vigouroux, "Psychiatrie des tumeurs cérébrales," *Revue de Psychiatrie*, 1896, 1, 100.

²¹ Levasseur, "Fonction intellective psychique dans les tumeurs cérébrales," *Thèse de Paris*, 1901.

²² Knapp: *Op. cit.*, p. 115, case xxxvii.

the brain. Outbursts of delirium with hallucinations are exceptional, and are due to toxic influences. Systematized delusions are due to coexisting degeneracy and not to the tumor at all. This seems somewhat strained. Increased pressure existed in many of my cases and was an important factor, but not the only factor. I have already referred to a case with hallucinations of sight and hearing and delusions of persecution. When he first came under observation he had typical Jacksonian epilepsy with slight paresis of the right hand due to an endothelioma growing from the dura in the left mid-Rolandic region. At that time he had no optic neuritis, no noticeable mental disturbances and very little headache. He passed from my observation, but nine months later he was trephined. It was reported that the growth could not be removed on account of hemorrhage. A hole four cm. in diameter was left in the skull, and hernia developed. A year later he became blind, the mental symptoms above mentioned developed and he was sent to an asylum. Later he became extremely dull and

wandering and delirium; in the third there was simple mental failure.

I have already shown the resemblance between the mental symptoms usually met with in cases of cerebral tumor to those occurring in toxic psychoses. Dupré, an ardent advocate of the toxic origin of these symptoms, has emphasized this point. He believes that the mental disturbances are due to the impregnation of the brain by products of disassimilation, cellular toxins coming from the new growth. He shows that many of the symptoms of tumor of the brain, such as headache, mental disturbance and neuritis, may also arise in toxic conditions such as uremia, diabetes and lead poisoning. He believes that the new growth secretes toxic substances growing at the expense of the brain, and that the gray matter of the brain is peculiarly sensitive to such poisons. He has found, furthermore, lesions throughout the brain, in cases of tumor, similar to those found in toxic-infectious troubles, and calls attention once more to the importance of toxins in the production of optic neuritis.

TABLE III.

| Nature of growth. | Total cases. | Total considered. | With mental symptoms. | TYPE OF MENTAL DISTURBANCES. | | | | | |
|-------------------|--------------|-------------------|-----------------------|------------------------------|-----------|------------|-----------|--------------------|---------------|
| | | | | Dull, stupor. | Confused. | Delirious. | Paranoid. | General paralytic. | Neurasthenia. |
| Tubercle | 21 | 4 | 4 | 2 | | 2 | | | |
| Glioma | 17 | 14 | 12 | 9 | 2 | | | 1 | |
| Sarcoma | 11 | 11 | 9 | 3 | 1 | 4 | 1 | | |
| Gunma | 8 | 8 | 8 | 6 | 1 | 1 | | | |
| Cyst | 5 | 4 | 3 | 1 | | 1 | | | 1 |
| Endothelioma | 4 | 4 | 4 | 2 | | 1 | 1 | | |
| Cholesteatoma | 3 | 2 | 2 | 1 | 1 | | | | |
| Carcinoma | 1 | 1 | 1 | 1 | | | | | |
| Cysticercus | 1 | 1 | | | | 1 | | | |
| Dermoid cyst | 1 | 1 | 1 | | | | | | |
| Angioma | 1 | 0 | | | | | | | |
| Aneurysm | 1 | 0 | | | | | | | |
| Chordoma | 1 | 0 | | | | | | | |
| Enchondroma | 1 | 0 | | | | | | | |
| Fibroma | 1 | 0 | | | | | | | |
| Osteophytes | 1 | 0 | | | | | | | |
| Pseudoma | 1 | 0 | | | | | | | |
| Total | 79 | 50 | 44 | 25 | 5 | 10 | 2 | 1 | 1 |

stupid, dying in coma. The mental symptoms and blindness developed after the pressure had been relieved by trephining.

In considering the possibility of toxic influences I have tried to see whether the nature of the growth had any influence on the development of mental symptoms. That a rapidly growing tumor will more speedily cause mental symptoms than one of slow growth is obvious, but beyond that I have been unable to find any special relation between the nature of the growth and the form of mental disturbance, except that delirious conditions were more apt to occur in cases of sarcoma, as the accompanying table will show.

The cases of diffuse multiple sarcomatosis of the brain, four in number, deserve special mention. One of them entered on account of a huge sarcoma of the neck, which was cured, the patient dying of shock the same day. No note was made of his mental condition by the surgeons. In two of the others there was marked mental confusion,

Pressure alone is hardly capable of producing optic neuritis, but when pressure is combined with the influence of some toxin, neuritis is speedily produced. The cases under consideration reveal nothing as to the nature, or even the existence, of these toxins, but it seems probable that while the situation of the growth is often of influence in producing mental symptoms, especially in the early stages of the disease, and possibly has an influence upon the nature of the symptoms, a combination of increased cranial pressure and the action of toxins is of greater importance, and in some cases may be the only factor to be considered in the production of such symptoms.

SMALLPOX IN VIRGINIA.—According to the *New York Medical Journal*, on account of the prevalence of smallpox in Richmond and in Petersburg, the secretary of the Manchester Board of Health has, by direction of the board, notified all manufacturing firms and employers of labor to see that all of their employees are promptly vaccinated.

THE OPERATION FOR CATARACT.*

BY FREDERICK E. CHENEY, M.D., BOSTON.

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At the beginning of my work in ophthalmology what most impressed me in connection with the operation for cataract was the ease of its accomplishment. This is to be accounted for in a measure by the fact that I was fortunate in seeing a number of exceptionally skilled operators, and an operation, like many other things, appears simpler and easier the nearer it approaches perfection. After nearly twenty years of operating, the view point is naturally a different one and my attitude is probably that of most men who have performed a number of hundred extractions. I now realize that it is not as easy and simple as it at first appeared and I am continually on the outlook for new points and suggestions. Most of us appreciate the advantage of seeing other surgeons operate and it is a matter of regret that a busy life gives so little opportunity for this adding to our knowledge. There is, however, something to be gained by an exchange of individual opinions on the various points of technique, etc., and in presenting this paper to the Society, I shall hope for a very general discussion.

In operating it is safe to say that all men prefer a thoroughly mature cataract, a chamber of good depth, a pupil that dilates well under a mydriatic, a quick light perception and good projection. While the absence of one or more of these favorable conditions does not of necessity contraindicate operation there is often a marked difference of opinion expressed in advising the patient. The complete maturity of the lens is not so much insisted upon as it was fifteen or twenty years ago. If the vision of the second eye is so defective that the patient is unable to read, get about satisfactorily or carry on his usual occupations, I do not object to operating on a lens that is swollen and the chamber narrowed, nor do I hesitate, under these conditions, if a certain amount of the lens is still transparent. There is one class of immature cataract where operation is, it seems to me, needlessly delayed. I refer to an extremely slowly developing nuclear variety that I have seen more often in the later part of middle life and not infrequently in myopic eyes. The anterior chamber is of good depth, sometimes deeper than normal. The central opacity is usually dense and well defined, with a number of striations extending towards the periphery while the larger proportion of the lens substance is transparent. The location of the opacity, however, and the resulting irregular astigmatism, give rise to a very defective vision that is little if at all benefited by glasses or mydriatics.

As both eyes are apt to be involved to about the same degree, and the waiting for maturity is a question of years, the condition is naturally a discouraging one for the patient. In two or three of these cases I have attempted ripening by making a free desiccation of the cortex, but there was no

swelling of the lens substance and the opacity produced extended little beyond the area directly involved in the needling. I have ended by doing an extraction and think in the future I shall not attempt a desiccation but extract in the beginning. The eyes have been unusually free from infection and have made good recoveries.

It is perhaps unnecessary to say that visual statistics should never be considered in deciding for or against operation. The fact that an iris is discolored or tremulous, that there are numerous posterior synechiae, opacities of the cornea or even faulty projection should not prevent one from operating if the patient is blind and there is a chance of improving his condition. To a man blind the ability to count fingers even at a distance of two or three feet will be of inestimable value and if he is properly constituted as to temperament it will be duly appreciated. Temperament is a factor that must always be reckoned with in considering the results of a cataract operation. The patient with 20/2000 vision is often the contented, grateful patient, and the one with 20/200 as often the chronic grumbler. While the absence of light perception of course forbids operation, except for the cosmetic effect, it is to be remembered that an occasional patient will be met with who absolutely refuses to see light, even after repeated trials, in spite of the fact that the pupil reacts satisfactorily. Such cases are probably naturally stupid and having been told that they must be blind before they can be operated upon, insist on being absolutely blind. It is unusual nowadays for a man to advise against extraction because of extreme old age, and the results are often surprisingly good even when the patient's general condition is far from satisfactory. I wish in this connection to report briefly a private case I operated on in 1901 as the exceptional acuteness of vision in a woman eighty-five years of age is worth recording. The sight had been failing gradually in both eyes for seven or eight years. One eye had been operated on the year before I saw her and the result had not been fortunate. An ophthalmist who had examined the eyes two or three years earlier wrote me that the opacity was so far back that he had located it in the anterior part of the vitreous so that it evidently began near the posterior capsule of the lens. In the fall of 1901, as the lens was entirely opaque, operation was advised and accepted. The extraction was with iridectomy and the recovery perfectly normal. She reported in November, 1905, and the visual result was as follows: At a distance of twenty feet with a C 11 = 4/3, cylinder axis 0. She read the 20/15 line without hesitation including the last letter a B, which two-thirds of my refraction cases fail to name at this distance. She then read correctly with the exception of three letters the 20/12 line. There had not been a secondary, and the clearness of the media and healthy condition of the fundus as indicated by this vision is certainly unusual in so old a patient.

In a case of mature cataract in one eye and good vision in the other is operation advisable.

* Read before the New England Ophthalmological Society, Dec. 13, 1906.

or is it better to delay until there is a marked failure of vision in the second eye? There is naturally a difference of opinion on this point although it is probably safe to say that the majority of men advise waiting. Personally, while I do not urge operation, if the patient lives in the city or other thickly settled community, there is much to be said in its favor and I regard it as perfectly justifiable. It is not, of course, often practicable to wear a cataract glass but nevertheless the ability to see even dimly large objects approaching from the side, — electric cars, automobiles, etc., without having to turn the head as one must continually with but one eye, — is a decided gain and will be an additional protection against accidents. Especially is this so if the patient is more or less deaf and, in consequence, unable to accurately locate approaching objects by sound.

In considering the question of antiseptics it must be admitted that the ophthalmic surgeon labors under decided disadvantages. The thorough scrubbing with soap and water, alcohol, ether, etc., which is so valuable to the general surgeon in preparing his field of operation is, of course, not applicable to the conjunctival sac, and we have most of us learned by experience that unless we can make use of germicides that are practically non-irritating it is better to use nothing at all aside from irrigation with the normal salt or other mild solution. It seems impossible with our present knowledge to have a conjunctival sac free from micro-organisms, and all that we can hope to accomplish is to reduce their number or lessen their activity. During my last Infirmary service, I made use of a 25% argyol solution, using it as a collyrium (t.i.d.) for three days preceding the operation and at the daily dressings following. It does not render the conjunctival sac sterile, as shown by the bacteriological examinations kindly made for me by Dr. Vierhoff. Nevertheless, the eyes have been exceptionally free from infection and conjunctival discharge and as far as can be judged from so short an experience it is of a decided practical value. When we consider the micro-organisms found in the normal conjunctival sac, that the lids are closed and the eyes bandaged for a number of days after the operation and everything thus made favorable for their multiplication and development, it certainly seems remarkable that infections are so infrequent. The most reasonable way to account for this is, it seems to me, that the constant flow of aqueous from the anterior chamber effectually irrigates the corneal wound until union has taken place. I believe that most infections are made at the time of the operation and that the instruments which enter the interior eye are the means of infection. If this is so, it is important not only to thoroughly sterilize our instruments but to use the greatest care when passing them into the anterior chamber that they come as little as possible in contact with the outer surface of the globe. For the same reason, the fewer instruments that enter the anterior chamber the less chance of infection, and

to remove and re-enter an instrument is always to be avoided unless absolutely necessary. The cleansing of the lids and integument adjacent to the eye, the thorough scrubbing of the hands, the sterilization of instruments, bandages, etc., has, of course, become a routine practice with every operator although there is naturally some variation in their individual methods. In my private operations the instrument case, dressings, cotton, towels, bowls, droppers, bottles of collyria, in fact, everything that I am to use about the eye is placed in Shearings' Formalin Sterilizer and sterilized. My instruments, after being boiled for ten minutes, are then placed in the case, the case left open, the lamp again lighted, the sterilizer closed and not opened again until the following morning at the time of the operation. My cataract knives are an exception to the ten minutes boiling, but I dip them in boiling water for thirty to forty seconds before placing them in my sterilizer. Gowns are worn by myself, assistant and nurse; also caps with pucker-string, which cover the hair much better than any other form I have seen, and gauze masks covering the mouth and nose. These are, of course, sterilized either by steam or formalin. The mask seems to me of special importance not only for the protection of the wound but of the sterilized instruments which are to enter the anterior chamber. In this connection the experiments of Dr. A. H. Levings of Milwaukee ("Surgical Bacteriology of the Mouth," *The Journal of the American Medical Association*, Aug. 12, 1905) are interesting, and the following which I quote especially so:

"Examinations were made to determine the number of bacteria thrown from the mouth in ordinary conversation, forced, explosive expiration and in coughing.

"A plate exposed for two minutes just in front of the mouth during ordinary conversation showed 235 colonies. A plate exposed for one minute at the distance of five feet during forced expiration showed 105 colonies. A plate exposed for one-half minute at the distance of five feet during explosive expiration showed 192 colonies. A plate exposed at a distance of ten feet showed 35 colonies after five forcible coughs. A plate exposed at a distance of 20 feet showed a development of 23 colonies after ten forcible coughs. These examinations were made in a bathroom which had no ventilation and was practically free from germs, so that a plate exposed for five minutes in quiet showed the development of but three colonies. In other experiments plates were exposed at the distance of five feet and coughed at five times forcibly with one, two and three thicknesses of gauze in front of the mouth. The plate exposed with one thickness of gauze in front of the mouth showed a development of 156 colonies. The plate exposed with two thicknesses in front of the mouth showed a development of 35 colonies, and the plate exposed with three thicknesses in front of the mouth showed a development of 8 colonies."

Gowns, caps and masks are worn at my dress-

ings until the wound is well closed. An assistant or nurse removes bandages, with the exception of the pad or cotton directly in contact with lids which I remove myself. I wear rubber gloves in my Infirmary dressings as it is easier to cleanse them in going from case to case than it is the hands. The chance of infection from currents of air, open windows and doors in the operating room must not be lost sight of, though the natural protection of the eye, and short duration of the operation makes this perhaps a less important consideration than in general surgery.

To manage one's patients satisfactorily is an important factor in the success of the operation and in the making of a good operator. The personality of the operator, of course, counts for much and methods that may prove successful in one man's hands may be entirely unsuccessful in another's. In my experience, the less fuss and talk made about the operation the better. It is advisable to explain to the patient, in as few words as possible, the amount of pain to be expected, the importance of not moving the eye except when told to, of not talking, etc.; but to impress them too much with the gravity and seriousness of the undertaking is certainly a mistake. That it is "all in a day's work," an every-day occurrence with the operator and that success is the rule, is the better attitude to adopt. The management of the case should, so far as possible, be entirely in the hands of the operator. If the assistant tells the patient how to look, the nurse holds up the finger as a point of fixation or someone else offers a suggestion, it will lead to confusion. After the speculum is introduced, it is a good rule that no one but the operator should speak or in anyway interfere with the patient unless asked to. During the operation, it is well to talk quietly and encouragingly. To speak firmly or even scold an unruly patient is sometimes necessary. To lose one's temper, however, is, of course, a mistake, though the provocation that a stupid, pig-headed patient will sometimes give is almost irresistible.

As a local anesthetic, for the last few years, I have used a 1% solution of holocaine in the place of cocaine. As the effects of the latter (cocaine) pass off, there is usually more or less smarting and a general feeling of irritation that it seems to me is absent with the holocaine. As a consequence there is one less cause of annoyance at a time when the patient is naturally nervous, and so less tendency to squeeze the lids and disturb the bandage.

Being ambidextrous, I always stand behind my patient. The want of ambidextrousness certainly in no way interferes with a good operation if a man is in other respects capable, but its possession is a distinct advantage and should, if possible, be acquired.

The introduction of the speculum is a simple thing, but if the globe is pressed upon unnecessarily or the lids stretched too widely open, the patient may be frightened at the beginning and as a result restless and hard to manage during the entire operation. A most important thing

to avoid is the stretching of the outer canthus which adds so much to the discomfort caused by the speculum. After it is introduced, therefore, the arms of the speculum should be brought near enough together so that this is avoided, even if in some nervous cases it means a considerable narrowing of the palpebral aperture.

In fixing the eye, I grasp the conjunctiva a little below the cornea, which is probably the position preferred by most men. I have noticed, however, that some operators apply the forceps just beyond the inner corneal border. It has seemed to me that the conjunctiva in this region, perhaps for the reason that it is often more or less thickened in elderly people, did not yield readily to local anesthetics and that its consequent sensitiveness made it especially undesirable as a point of fixation in any operation.

In making my corneal cut, I try to confine it to the limbus from start to finish. If it is completed too far forward there is a greater liability to anterior synechia, and if it is carried backward involving the conjunctiva at any point, there may be bleeding into the anterior chamber which will often interfere greatly with the smoothness of the operation. The position of the incision is of little consequence, however, in comparison with its size, for a corneal cut that is too small is accountable for more bad results to my mind, than any other fault in technique. It is impossible to say just how much of the corneal circumference should be included, as the size of the lens may be out of all proportion to the size of the cornea. The mistake is oftenest made when the cornea is small, and if a good sized lens happens to be well sclerosed, trouble will be sure to follow.

A corneal cut is rarely too large, and it is a good rule in every case to make it a little larger than seems absolutely necessary.

In regard to the question of extraction with or without iridectomy, while I am not opposed to the simple extraction and do this operation when the conditions are favorable, I find that I incline more and more to iridectomy, as I continue to operate. A small, well made iridectomy is not a blemish and to my mind in no way detracts from the acuteness of vision. Statistics on this point are of doubtful value, as so many other factors must be considered besides the presence or absence of a coloboma. The question of prolapse of the iris is an important one in connection with simple extraction and I will here refer briefly to the condition that most strongly indicates to me the probability of this unfortunate result taking place. I think it is generally conceded that the mechanism of prolapse in the majority of cases is as follows: The corneal wound having united and the anterior chamber re-established, the lips of the wound suddenly separate from some cause and the iris is carried outward by the escaping aqueous. The point I wish to make is that in certain cases a greater tendency to prolapse exists than in others for the reason that there is a greater tendency to a separation of the corneal wound and extrusion of the anterior chamber. Also that this tendency can

usually be recognized at the time of the operation and when recognized is an indication for an iridectomy. If, after a simple extraction is completed the patient is instructed to look downward as far as possible, it will be found in the majority of cases that there is little if any tendency to a separation of the edges of the wound. In a certain number, however, a very marked separation will be noticed and it is in these cases that a prolapse is most liable to occur. For it can be readily understood that with so marked a predisposition of the edge of the wound to separate, a movement of the eye downward after the anterior chamber is re-established, but before firm union has taken place, is much more liable to result in a sudden evacuation of the aqueous and prolapse of the iris than in cases where no such tendency exists. In giving prominence to this condition as a cause of prolapse, I do not wish to be understood as believing that it is the only cause or that its general recognition will do away entirely with prolapses. I simply present it as an important causative factor that has not, so far as I am aware, received the general recognition which I am confident that it deserves.

It is perhaps hardly necessary to mention the importance of entering and withdrawing the cystotome heel first and thus avoiding any entanglement of the iris. I usually enter the anterior chamber near the right angle of my corneal wound carrying the cystotome obliquely to a point below the center of the pupil and after making the usual T-shaped opening in my capsule withdraw it obliquely to the left. Two years ago in a number of cases I divided my capsule with the point of the knife after making my puncture. It is not a difficult thing to do and in no way interferes with the proper completion of the corneal incision, if the pupil is of good size and the anterior chamber of moderate depth. My reason for giving it up was that the T-shaped cut in the capsule could not be made and there was consequently more difficulty in removing the lens. This method is, I believe, satisfactorily practiced by some surgeons, and the lessening by one of the number of instruments entering the eye is certainly a point in its favor.

In doing an iridectomy I aim to make a small one and so include as little as possible of the iris tissue in the forceps points, and cut with my scissors from below upward, that is, from the pupillary border toward the periphery.

With a good sized corneal incision, there is rarely any trouble in removing the lens, but most of us are occasionally caught with too small a wound. When the lens is a third or more delivered, the well-known method of having an assistant rotate it laterally with the iris forceps or some other instrument will often help one out of the difficulty. If it does not, a prompt enlargement of the cut or even the use of the scoop is preferable, I believe, to a prolonged manipulation of the eye. Neither does it seem to me necessary or desirable to spend much time in trying to remove small amounts of cortical. It absorbs quickly, as a rule, and much of the trouble

that it was formerly held accountable for is now more reasonably attributed to infection. If the nucleus is entirely removed a very large amount of remaining cortical causes me no anxiety, though I, of course, prefer to have it out, as absorption is not always rapid and a secondary is more often necessary. The various instruments devised for irrigating the anterior chamber have never appealed to me; first, because as I have just said, I believe the presence of cortical rarely interferes seriously with a good recovery and, second, because it means the introduction of one more instrument into the wound which I regard as a serious objection unless it contributes very materially to the success of the operation.

A source of infection in certain cases is probably the fluids — aqueous, lachrymal secretions, etc., — collected in the lower cul de sac after it has washed the conjunctiva pretty thoroughly, and is likely to be well laden with bacteria. Unless this is removed by occasional sponging the ends of the corneal wound are sometimes well bathed in it when the eye is rotated downward. Especially is it important to see that this space is well dried before removing the speculum, as the closing of the lids may force this collection over the entire length of the incision. In removing the speculum, it is also well to remember that some patients seem to take a solid satisfaction in giving the lids a good squeeze as soon as it is out or even half way out and it is therefore best to tell them when you are to do it and to caution them against closing the lids until they are told to and then to close them gently. I have always used atropine after my operations. It has never seemed to me to increase the danger of prolapse, and it is certainly an advantage to get mydriasis as early as possible.

I have used various bandages and have returned to the one I began with, the old Berlin knit bandage, as being on the whole the most satisfactory. As to after treatment, my patients are kept in bed for two to three days, the dressings changed daily, and the bandage removed permanently on the seventh or eighth day. Atropine is instilled, and, as I have already said, a 25% solution of argyrol, at each dressing. I have tried getting my patients up on the first day, of not disturbing the eye until the second or third day, of removing the bandage permanently earlier than the seventh day and various modifications suggested by other operators, but the more conservative after-care that I was taught as a house-officer, I have found to give the best results, and I think the same opinion is held by most of my Infirmary colleagues.

MOSQUITOES IN NEW JERSEY. — The bill appropriating \$350,000 for the purpose of mosquito extermination in New Jersey passed the Senate last week. The cost of draining with the processes devised by the Mosquito Department is about \$1.40 an acre. Newark last year drained 3,500 acres at an expense of \$5,000. The appropriation about to be made will dry up all the 200,000 acres of marsh land still remaining. The work, it is calculated, will take five years. — *Medical Record*.

THE EARLY DIAGNOSIS AND THE AGGRESSIVE TREATMENT OF PULMONARY TUBERCULOSIS IN A LARGE OUT-PATIENT CLINIC.

BY JOHN R. HAWES, 20, M.D., BOSTON.

THE HARM DONE TO CASES OF PHTHISIS BY THE TREATMENT ORDINARILY GIVEN IN OUT-PATIENT CLINICS.

To every out-patient clinic many cases of pulmonary tuberculosis—a great majority, indeed—come in an advanced stage when the diagnosis is far too evident, and when a single glance at the sputum suffices to confirm it. Others, however, are first seen in the early period, the closed stage of pulmonary tuberculosis, seeking relief and treatment for a troublesome dry cough or for vague general disturbances,—debility, anemia, stomach trouble, loss of weight, etc. Often there is no sputum; sometimes there can be obtained a small amount of mucoid material mixed with saliva, in which, on repeated examinations, no tubercle bacilli can be found. The signs in the lungs are slight or even apparently absent altogether. Of this class of cases some are of tuberculous stock and their general appearance suggests that they themselves have the disease. In the past, and to a large extent now, the routine treatment of these cases has been more or less as follows:

A woman comes in suspected of having phthisis but with no positive signs. She is carefully examined by the physician in charge, given potassium iodide if the sputum is scanty, and told to collect her sputum and return in three days. This is generally done. If the sputum is positive she is at once started on whatever line of treatment is thought best; if not, as is often the case, the patient is given careful directions by the house-officer about the need of fresh air, general hygiene, etc., she is supplied with iron if anemic, malt or cod-liver oil, and told to return again in a short time. This is sometimes done. Too often, however, she goes home, improves temporarily under treatment, but, making no radical changes in her method of living and gradually forgetting the warning given by the doctor at the hospital that she must return and be examined again, she soon goes back to her old ways, and when she returns to the hospital, months later if she ever does, is in an advanced stage of consumption.

It is the diagnosis of this class of cases that is difficult. In this country physicians are far too prone to delay treatment for tuberculosis until the bacilli are found in the sputum. Patients are seen and examined and then told to return again with their sputum without having the reason for this procedure explained or the difficulty of the diagnosis made clear. This is continued until the patient wears of what is to her a useless task and does not return. Admitted that an absolute diagnosis of pulmonary tuberculosis is not possible until bacilli are found, yet a diagnosis so very probable as to justify immediate energetic treatment is possible while the disease is still in the closed stage. The unfortunate re-

sults of waiting for localizing signs and for bacilli to appear in the sputum is shown by the following case:

Grace T., a young woman of thirty, first came to the hospital in April, 1898, complaining of a slight cough and a pain in her chest. She felt weak and tired. One sister had died of consumption in 1895, but until recently she herself had been well. Her hemoglobin was 65%, her temperature 99°. The heart and lungs are recorded as negative. She was given Bland's pills. She did not return until five years later in September, 1904. In the meantime, one brother had died of tuberculosis in 1903, as well as the sister in 1895. The patient said that for nine months she had been troubled with a pain in her chest and a bad cough which she had had off and on since her last visit. She was weak and tired. As before, her hemoglobin was 65%, and her temperature 99°. Over the left upper lobe there was prolonged expiration and an occasional fine rale. She was given potassium iodide and told to come back with her sputum. She did this, and on four separate examinations over a period of four months no tubercle bacilli were found. The same dry troublesome cough continued. In January, 1905, she was treated for a slight erosion of the cervix. July 7, 1905, she came again complaining of the same cough that she had had for the two years before. Bacilli were at last found in her sputum and signs of a small consolidation at her left apex.

In this case no active measures to combat the tuberculous process were taken until July, 1905, when the sputum was positive for the first time, although in view of the family history and the physical signs the diagnosis must have been more than probable nearly one year previous and suspected at her first visit five years before.

This case is a similar instance.

John W., thirty, single, came to the Out-patient Department Dec. 14, 1903, with a simple sprain of his back. He said he had been treated there for a cough five years before. He weighed 143 pounds. The lungs showed an occasional rale in the posterior portion. The sprain was soon relieved by strapping. Ten months later, in September, 1904, he returned, complaining of a pain in his chest and a cough with bloody sputum which he had had for four days. Except for this he felt perfectly well. His weight was 147 pounds, six pounds under that of a year before. His temperature was 99.2°. The lungs are recorded as negative. He was given a cone and told to return with his sputum. He did not come again until five months later in February, 1905. His cough and the pain in his chest were worse and he had lost seven pounds in the last two months. There were a few rales at both apices. He was given advice, a cough mixture and told to return with his sputum. This he did not do. Five months later, July, 1905, he returned with a very bad cough, having had repeated hemorrhages, very weak and emaciated. His entire chest was dull except at both axillae and there were moist rales all over. No tubercle bacilli were found in his sputum but chest films were present in large numbers. He was sent to the Free Hospital Consumption, where a few months later he died.

In this case the unwisdom of waiting for a positive diagnosis of phthisis and to treat the patient as a consumptive until the disease had appeared in the sputum is demonstrated in his life. In addition to this the mistake was made,

which the writer considers a grave one, of giving medicine, a cough mixture or a tonic, when the patient was told to bring back his sputum. He got the medicine for which he came and was unwilling to bother about his sputum.

THE NECESSITY OF EDUCATING THE PATIENT.

The grave difficulty of handling this problem is not that there is any lack of willingness on the part of the physicians—they are glad and eager to do all in their power—but that the patients will not co-operate with the doctor in his efforts to get at the trouble. They come for medicine which will cure them; when they get it they go away satisfied.

During the past summer in the service of Dr. J. H. Pratt in the Medical Out-Patient Department of the Massachusetts General Hospital, the writer was placed in charge of all the tuberculous or suspected tuberculous patients who entered the clinic. There was a large corps of assistants, intelligent and conscientious fourth year students, to each of whom every morning was assigned one or more new cases. The student made a careful physical examination of his case, taking pulse, temperature and respiration, examining urine and, when necessary, blood and sputum. Complete notes were written and the case demonstrated to the physician in charge or to his graduate assistant; after this, if the patient were suspected of having phthisis, he was handed over to the writer placed in charge of this department. Here, by means of a most detailed examination, by the use of tuberculin, x-ray, and chest measurements, and, most important of all, by trying to educate and to interest the patients so that they might realize the true state of affairs, work with the doctor and appreciate what he was trying to do, more encouraging results have been obtained; more early diagnoses have been made, and patients have returned for repeated examinations more often than before. Of the many cases in which tubercle bacilli were found in the sputum at once or after a few examinations no mention will be made. These were immediately started on whatever line of treatment that was best suited to them,—sent to Rutland, Tewksbury, or Long Island, or given hygienic open air home treatment as carried on by the Emmanuel Church Tuberculosis Class. The diagnosis once decided upon, no prolonged attempt was made to treat these cases of consumption in the Out-Patient Department itself. The methods used in other cases where there was no sputum, or, if present, no bacilli to be found in it, will be given more in detail.

Fever.—The temperature of most of these early cases is normal when it is taken at the hospital in the morning. In order to find out whether there was any fever, however little, at night, each patient was told to provide himself with a thermometer and was shown how to use it. He was then told to take his temperature night and morning for a few days and to return for further examination. In this way much valuable information was obtained and the way made

easy for giving tuberculin if this was deemed advisable. Some cases were not willing to get thermometers and others were not able to read them; they were in the minority, however.

Tuberculin.—As it was impossible to get beds in the hospital for this purpose, the test had to be carried on in the Out-Patient Department and the very obvious difficulties combated as best they could. The preparation used was Koch's old tuberculin made under the supervision of the German government and recently imported to this country. This was made into the proper dilution at the hospital, before each injection, by Dr. Pratt and the writer. Each patient had previously bought a thermometer or had been provided with one and he was shown how to use it; he was instructed to put it in his mouth for five minutes every two hours, not to shake it or disturb it in any way, and, after remaining quietly at home for twenty-four hours, to return to the hospital. A few patients, especially among the women, could read and record their temperatures; these brought in carefully written reports. The temperature in all cases had been normal previous to injection. In only a few cases was the result a positive one, but these few justified its use. In no case could it be seen that the slightest harm was done.

The following rather striking case in which the diagnosis was made after the use of tuberculin is of interest:

John H., twenty-two, single, came to the hospital July 5, 1905, with his mother who said that he had coughed for three months and at times had raised bloody sputum. The young man himself said that he was perfectly well and he certainly looked so. His temperature was 98° and his pulse 75. There was an occasional dry squeak in his right upper chest. The sputum was very scanty; no tubercle bacilli could be found in it after repeated examinations on different days. He was given 1 mg. of tuberculin and instructed how to take his temperature. The next morning he returned having a temperature of 99.5° six hours after the injection. On listening to the suspected right apex, instead of a rare, dry squeak, numerous fine, moist râles were heard, in other words a definite *local reaction* had taken place. While breathing deeply he raised a single homogeneous mass of muco-purulent sputum, one preparation of which showed eighteen tubercle bacilli. He joined the Tuberculosis Class, sleeps in a tent on his roof, has gained twenty-five pounds and is now ready to work.

Out of the 17 cases in which tuberculin was used, a definite positive result was obtained in four.

X-ray.—The x-ray was used whenever possible. In a few cases distinct help was obtained from it, especially as regards the movements of the diaphragm; it was found in practically all cases, however, that the limits of diaphragmatic excursion could be as accurately localized by careful percussion at the end of deep inspiration and expiration as by the use of the fluoroscope. The writer is therefore convinced that, except in the hands of experts, the x-ray is of very little value as an aid to the early diagnosis of tuberculosis.

Mensuration.—The chest of each patient was measured according to the methods used by Lawraon Brown and others. The circumference at the fourth rib on expiration and inspiration and also of each half separately was taken; the excursion of the diaphragm at the base of each Litten's sign was noted. One series of measurements of the chest contour was of special interest. The apparatus used for this purpose was the pectorimeter invented by Zander of Sweden, a complex but extremely beautiful and accurate piece of mechanism, by means of which the exact shape and size of the chest on both inspiration and expiration can be graphically shown on charts. One of these machines is now in the Department of Mechano-therapy at the hospital and with it the measurements were taken under the supervision of the director, Dr. Max Boehm.

Spirometry.—Late in the season by means of the spirometer, the vital capacity of each patient was measured. The small lung capacity of these early cases as recorded by this machine agreed with the other measurements which were taken, showing a restriction of the respiratory movements, in contrast to cases of cough not due to tuberculosis in which the lung capacity was very much greater in proportion. As with tuberculin and x-ray, while it was not often that mensuration, in the writer's hands at least, was a very large factor in making a diagnosis, yet in almost every case it formed one link in a chain of evidence, the sum total of which was enough either to make a negative diagnosis or a positive one of phthisis sufficiently probable to warrant immediate energetic treatment.

THE PERSONAL ELEMENT IN EFFECTIVE TREATMENT.

The object of this paper is not to throw any new light on the early diagnosis of tuberculosis as a whole, but to show the way that last summer's work has convinced the writer that these cases in the closed stages should be handled in a large clinic. In addition to the use of detailed methods of examination, and in his opinion of far more importance under the circumstances, is the fact that all of these cases were in the hands of one man who did nothing else at the clinic and who had plenty of time to go into every detail of the patient's past life and present surroundings. He was able to examine their chests and vital functions in every way; he could take the patients aside and carefully explain the difficulties of telling by one or two visits exactly whether he or she had or had not tuberculosis and he could show the importance of an early diagnosis. After the first visit the patient knew to whom they were to report and had a personal interest in their doctor. They did not have the long hours of waiting nor were they examined each time by a different man with new methods and ideas. The objection may be raised that this is taking the most important group of lung cases out of the clinic and forming a separate department. This is not so. Every new patient was first examined by a student assistant who

then, if necessary, handed the suspected case over to the doctor in charge of that group and he in turn, as he followed it along, demonstrated it to all the workers in the clinic.

The early diagnosis of pulmonary tuberculosis requires a careful and painstaking examination with the weighing of one detail against another. A correct diagnosis can only be made from the accumulative evidence of slight and apparently insignificant variations from the normal. Mensuration, spirometry and the use of tuberculin are all of value toward this end. Early diagnosis, however, in a large out-patient clinic where forty to seventy patients are seen every morning requires more than this. In addition to detailed methods of examination the *personal element* must be brought in. The physician must get acquainted with his patients, tell them what tuberculosis is and explain what he is trying to do; in other words, he must educate them. This is the real secret of a successful solution of the problem.

SUMMARY AND CONCLUSION.

1. By waiting until the diagnosis of tuberculosis is proved by the demonstration of tubercle bacilli, those in charge of out-patient clinics are sometimes responsible for the death of the patient.
2. Careful temperature records by the patients themselves, the use of tuberculin, mensuration and spirometry assist us to recognize the disease in the closed stage, i. e., before bacilli appear in the sputum.
3. Of supreme importance both for the early diagnosis and efficient treatment of these cases is an aggressive personal interest on the part of the physician in charge; he must himself take the initiative, educate and encourage the patient and hustle for his future good even when the patient himself is listless and indifferent.

New Instrument.

A NEW NEEDLE HOLDER.

BY J. FLETCHER BARNES, M.D., BOSTON.

THE chief objections to the needle holders in common use are two: (1) They do not hold curved needles firmly enough to prevent their turning when the tissue to be punctured is tough or thick. (2) If sufficient pressure is applied to prevent the needle from turning they usually break the needle.

It is with the idea of overcoming these objections that I have devised a new needle holder. Its principles are quite different from those of the ordinary ones and after being given a thorough test by several different surgeons, the claims made for it seem to have been fulfilled.

Its advantages are: (1) Curved needles are gripped too securely to turn over. (2) Needles are not broken. Combined with the simplicity of construction and durability

The accompanying illustrations show the mechanism of this holder. The handles and lock are like those of an ordinary hemostat. One shank is continued into a jaw, which is on the same side of the instrument as its handle, a feature in which it differs from the common clamp. This may be called the stationary shank. The other shank ends about three fourths of the way from the handles, is secured to its fellow by a screw,

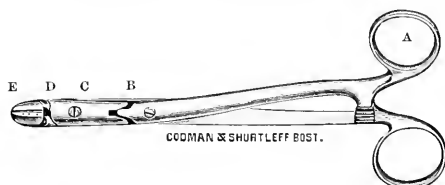


FIG. 1.

and is tapered down to a point, its slopes being concave. This point bears on the convex slopes of a corresponding notch in the continuation of the shank. This continuation is pivoted at about its middle by a screw, and then continues on to form the other jaw of the instrument.

It is by this system of levers, alternating long and short from the handle, that the tremendous grip of the jaws is obtained. This leverage can be ascertained experimentally by a simple algebraic



FIG. 2.

equation. Let us consider the measurements of the levers to be as follows, said measurements being taken from center to center of each length.

From point A (center of ring) in the cut to the point B (center of screw) is 4 inches.

From the point B to the point C (point of contact in notch) is half an inch.

From the point C to the point D (center of screw) is three quarters of an inch.

From the point D to the point E (where needle is commonly held) is half an inch.

Let the pressure exerted on the handles be ten ounces. Then

$$4 \times 10 = \frac{1}{2} \times x$$

$$40 = x = 80 \text{ oz.} = \text{pressure at C}$$

$$\frac{1}{2} \times 80 = \frac{1}{2} \times x$$

$$40 = x = 120 \text{ oz.} = \text{pressure at E}$$

It will thus be seen that a very small amount of pressure exerted on the handle is multiplied many times at the jaws. In this way the powerful grip of the instrument is obtained, a grip sufficient to hold fast any curved needle.

Now with the corrugated steel jaws of the common needle holder and this magnified grip, curved,

and probably straight needles as well, would be broken every time. To obviate this I have had the approximating surfaces of the jaws faced with soft metal, the one on the single straight shank with brass; the one on the divided shank with copper.

These pieces of metal approximate the steel jaws on three surfaces and are soldered to them, thus giving added strength. This provides a comparatively soft bed for the needle of which the shape and curve is accommodated by the jaws.

For holding the larger needles I have had two notches cut in one jaw at some distance back from its point. Experimentally I found that if both jaws were lined with copper they were not as durable, and that it was sufficient to have only one of copper. The brass is soft enough to be slightly impressed by the needle and makes a much more durable bed. These pieces of soft metal have been found to wear a very long time, and when worn down too much can be replaced in a few minutes by any instrument maker, and at trifling cost. In using the needle holder it will be found more convenient to keep the divided shank uppermost, but it really makes no great difference which is on top.

In cleaning the holder the handles have only to widely separate thus throwing the pointed shank out of its notch, when all the parts can be manipulated as desired.

Clinical Department.

A CASE OF CEREBRAL ABSCESS.*

BY BENJAMIN T. BURLEY, M.D., WORCESTER, Neurologist to the Worcester City Hospital and Visiting Physician to the Neurological Dept., Memorial Hospital, Worcester, Mass.

THE following case seems worth recording on account of the extent of the abscess, its accompanying symptoms and the question of its etiology.

On April 7, 1905, I was asked to see E—D—, a boy seven years old, of whom the family physician, Dr. C. B. Stevens, gave me the following history:

The child, like its mother, had always looked pale and rather delicate but, aside from mild attacks of scarlatina and tonsillitis, had not been ill. There was no history of tuberculosis in the family. Though the boy had been in a street car accident six months previous he had escaped with no apparent injuries. Before March, 1905, he had at rare intervals complained of mild headaches and feeling tired. He had never had convulsions.

March 14, 1905, the boy in playing was thrown from a child's express wagon, striking his head on a brick sidewalk. He was a little dazed but not unconscious and a day later showed no signs of the accident except a hematoma one and one-half inches above the right eye. One week later he had a sudden attack of vomiting and was temporarily in an epileptiform convulsion with unconsciousness. A few days later he began to complain of pain in the head, especially

* Presented before the New England Psychological Society, Oct. 24, 1905.

across the forehead. This came on suddenly, sometimes making him cry out when at play, and it might leave us suddenly.

March 30. He is said to have vomited at school and came home with a headache. For the next three days he visited his grandmother. He was not active, did not eat well and had headaches. From this time until my visit the frontal headaches became more constant and the child was kept in bed, the pain being more severe with the head raised.

On examination I found a fairly well nourished boy with a pale skin. He was apparently of nervous temperament, bright and somewhat precocious. He was not complaining when under observation. The temperature was 99.2, the pulse 60. The head showed no evidence of injury, unless by slight blueness of the veins over the right forehead. The pupils were round, equal and reacted to light and distance. There was slight photophobia. The heart sounds were distinct and normal. The lungs and abdomen were normal. There was no marked disturbance of either superficial or deep reflexes. No Babinski. Sensation was normal, there being no hyperesthesia. No paralysis. No "tache cerebrale." Kernig's sign present.

On the evidence at hand I thought lumbar puncture hardly justifiable, but took some blood for a white count. Small doses of a bromide were advised to help eliminate the nervous element. For a day or two under this treatment the child made little complaint, then the headache again became severe. Having found a leucocytosis of 13,000 I again examined the boy April 11. On this date there was a leucocytosis of 18,000. The boy complained of a stiff neck and the post-cervical glands were found to be enlarged. The head was not retracted. Other than the glandular enlargement there was nowhere any local evidence of an inflammatory process. The temperature had ranged from 99.1 to 99.5. The pulse from 48 to 60. In fact the low pulse had been remarked even by the family. Though the examination was practically unchanged from before I began to take a grave view of the case and suggested a fundus examination.

On April 13, Dr. Estabrook reported that the nose and ears were normal. The optic disks, especially the right, showed a slight degree of hyperemia and had a "woolly outline," suggesting increased intracranial pressure. The next morning the child was sent to the Worcester City Hospital to have lumbar puncture performed and to be under constant observation by the surgeons. By spinal puncture 10 cc. of spinal fluid was withdrawn. It was clear, showed no cells or organisms and gave rise to no bacterial growth. For three days afterward the headache was practically absent, the appetite improved and the child seemed better. At this time there was a leucocytosis of 15,000. At times the heart beat rather hard against the chest and there was a systolic murmur at the apex, not well transmitted. Following this brief relief from pain the cerebral pressure symptoms returned worse than before. The temperature again rose, headache and restlessness increased and there were short intervals of delirium. April 21, a second fundus examination showed a noticeable increase of the hyperemia, especially of the right disk. The next morning, at their own request, the parents took the child home.

When seen two days later, the child showed rapid emaciation in spite of taking a fair amount of nourishment and was losing strength. Complete paralysis of the right third nerve appeared, producing ptosis of the lid, dilatation of the pupil and divergent strab-

ismus. The vision had already become somewhat clouded. Babinski reflex was found present on the right. April 30, it was noticed that the right arm and leg were not moved though the face was not then paralyzed.

From this time on the pulse became more rapid and irregular. Blindness rapidly became total. Tonic convulsions occasionally occurred, especially affecting the left side, with opisthotonos. The temperature was not now elevated. The child was conscious and fairly rational much of the time. Early in the morning of May 11, after a series of severe convulsions, the boy died.

AUTOPSY.

Five hours post-mortem. Body emaciated. No sign of injury about head. Cranium opened by the angular method. Dura not adherent and not abnormal in appearance. Cortex exposed by removal of dura. Venous engorgement is marked, especially over the left parietal region, and toward the Sylvian fissures slight cloudiness of the pia can be made out. The right hemisphere feels rather tense but fluctuant. No lesion of the cortex visible. Brain removal carried out from before backward and, while being manipulated, the cortex burst in right occipital region releasing about three ounces of foul pus. Base of brain showed some thickening of pia near blood vessels as well as some cloudiness. The basilar artery is hard and thrombosed. There was no crack or fracture of the skull visible. In the right middle fossa of the skull, 2 cm. from the sella turcica, is an irregular erosion 1 cm. across and involving both tables of the skull but not admitting a probe in any direction.

Spinal cord not removed.

During the autopsy cultures were taken from the cortex and base of brain and smears from the thick, viscid pus from the abscess cavity.

The bacteriological report by Dr. Hunt showed that the cultures from the meninges were sterile but the smears from the abscess cavity showed numerous streptococci in the necrotic brain tissue.

After having been hardened in S^4 formalin the brain was prepared for examination by a series of frontal sections. The abscess was found to extend from the level of the mid-frontal lobe horizontally through the central and upper portions of the right hemisphere to within 2 cm. of the tip of the occipital lobe. It reached nearest the cortex at the point where rupture occurred at the intraparietal fissure. While the main body of the right internal capsule was not actually invaded by the abscess the capsule was depressed and practically roofed by the abscess. The abscess was 7 cm. in diameter in its central portion. Aside from some compensatory distortion the left hemisphere was apparently normal.

This case has several interesting features. Here we have a boy who, following a concussion, develops symptoms of an intracranial lesion which two months later at autopsy proves to be a large focal abscess without accompanying meningitis. The point of entrance of the bacteria is not determined. Unfortunately, a general autopsy was not done, but clinically there was no evidence of a septic condition in any other part of the body. It might be hard for even a medico-legal expert to detect the part which the injury played contributory to this lesion or present.

During the last week of his life the child had a right hemiplegia, the same side as the abscess.

Though becoming early convinced that we were dealing with a purulent cerebral lesion, the difficulties of localization peculiar to this case prevented us from getting to the point of operation before the parents decided they would prefer to have the child at home. As it turned out, either an operation through the frontal bruised area, or, later, an opening over the motor area opposite the hemiplegia could not have led to the lesion.

thought the x-ray could be used with perfect assurance of safety providing caution and patience were employed in its manipulation. He was in favor of using a minimum quantity and making repeated applications, so that the effects of the ray were secured slowly and carefully. The speaker said the strength of the rays could be judged accurately by the character of the glow in the tube. Personally, he preferred a glow that was of a pale, apple-green color.

DR. THOMAS C. GILCHRIST, of Baltimore, Md., said that as the x-rays possessed no bactericidal powers, we had to depend upon their destructive action for a cure of the disease to which they were applied. In acne his results had been good, although some relapses had occurred. In lichen plants he had seen cures effected very much quicker by this method than by any other with which he was acquainted. In dealing with rodent ulcer and various other forms of malignant tumors, he was in favor of doing a preliminary curettage, as the x-ray did not have much effect upon the growth until the hard edge was broken down.

DR. S. POLLITZER, of New York City, said sufficient evidence had been adduced to prove that the x-ray was a valuable addition to our therapeutical resources, and the discussion regarding it was in general harmonious as to its indications and advantages. The speaker briefly reported two cases of epitheliomatous growths of the mucous membrane, both of which did very badly under the x-ray treatment.

DR. FRANK H. MONTGOMERY, of Chicago, Ill., said that after a considerable experience with the x-ray, he had never had any bad results from it in the way of troublesome dermatitis or burns.

DR. STELWAGON, in closing, said that in his x-ray work he always tried to employ the lowest current that would answer the purpose.

A CASE OF TROPICAL ULCERATION INVOLVING THE NOSE, PHARYNX AND LARYNX, WITH HISTOLOGICAL FINDINGS.

DR. JOHN A. FORDYCE, of New York City, and DR. W. F. ARNOLD, Surgeon, United States Navy (Retired), reported this case. The lesion was a granuloma, the nature of which could not be determined by the methods employed. It could be differentiated from others of this class, like blastomycosis, actinomycosis, rhinoscleroma and lepra by the absence of their specific micro-organisms; from mycosis fungoides by the character of the infiltrate and the absence of fragmentation. The histological picture could readily have been mistaken for tuberculosis, as the giant cells were numerous, with nuclei arranged peripherally, and many independent foci containing three or four cells were encountered deep in the corium. The existence of tuberculosis, however, seemed to be conclusively disproven by the failure of inoculations and tuberculin tests, as well as by the absence of bacilli in the secretions and sections. It was also probable that the affection was distinct from yaws. It was difficult to exclude syphilis microscopically, but the fact that the condition was influenced in no manner by large doses of iodide of potassium or of mercury, given internally, hypodermically and by inunction favored some other diagnosis.

A CASE OF MERALGIA PARESTHETICA.

DR. JAMES C. WHITE, of Boston, Mass.: The patient was a man, fifty-five years old, who became aware in July, 1905, of abnormal sensations in the skin of the outer, lower two thirds of the right thigh after an ordinary walk of four or five miles. The feelings were of a tingling nature. From that date, on standing or walking, this region became the seat

Reports of Societies.

AMERICAN DERMATOLOGICAL ASSOCIATION.

TWENTY-NINTH ANNUAL MEETING, HELD AT THE ACADEMY OF MEDICINE, NEW YORK CITY, DEC. 28, 29 AND 30, 1905.

THE PRESIDENT, DR. WILLIAM T. CORLETT, OF CLEVELAND, OHIO, IN THE CHAIR.

ADDRESS BY THE PRESIDENT.

DR. CORLETT, in his opening address, said that while the study of dermatology in this country was awakening keener interest, and was better taught than ever before, yet the character of the teaching in many schools left much to be desired. The almost general recognition of dermatology in the curriculum was an epoch in the evolution of American medical education.

ADDITIONAL OBSERVATIONS ON THE ROENTGEN RAYS IN DERMATOLOGY.

DR. HENRY W. STELWAGON, of Philadelphia, Pa., said that at the meeting of the Association two years ago he gave a résumé of his experience with the Roentgen ray treatment of various cutaneous diseases. Practically repeating, to some extent, his former conclusions, he could say now, in the light of wider experience, that we had in the x-rays a valuable addition to our therapeutic resources, but it was by no means a measure that should be used indiscriminately, or be permitted to supplant other methods equally useful but without possible deleterious effects; that its application should be extremely cautious and conservative in non-malignant dermatoses, and, excepting in extremely obstinate cases, it should be used more as an adjunct than as the sole remedy; that in malignant diseases it could be used somewhat boldly and often with the prospect of cure, or at least distinct amelioration; but that even in such diseases it might often be more advantageously employed as a helpful and supplementary measure than as the sole method of treatment.

DR. A. RAYOGGI, of Cincinnati, Ohio, said he had formerly felt very enthusiastic in regard to the value of the x-rays in dermatology, but the more he used them, the less he liked them. In psoriasis he had seen the lesions rapidly disappear under the use of the rays, only to reappear in the course of a couple of months. The same was true of its use in other skin diseases.

DR. M. B. HARTZELL, of Philadelphia, Pa., said he had seen numerous cases of acne and other skin diseases where a cure was effected with the x-ray without the production of a dermatitis, but in view of the absence of any reliable method of measuring the dose, he did not see how it was possible to avoid untoward effects occasionally.

DR. WILLIAM A. PUSEY, of Chicago, Ill., said he

of a variety of perverted sensations, described as tingling, tenseness and tearing, and formication. Sometimes there were darting sensations, like the bursting of a bubble; sometimes a dull, deep pain or ache when the leg was tired. They often began as a glowing sensation in the part. They generally ceased on sitting or lying down, but might recur in such attitudes on over-stretching or violently twisting the leg. Deep pressure with the hand over the part might bring them on, and the patient was always aware of something wrong there on standing or walking. The sensations were felt every day, and interfered with his habits of exercise. They were somewhat on the increase. There was no pruritus nor feeling of constriction in the affected surface.

On inspection, it was apparent that the area complained of corresponded strictly to the distribution of the cutaneous filaments of the external cutaneous femoral nerve. The skin presented to the eye no marked differences from the corresponding region of the opposite thigh. The patient was of good habits, and had shown no indications of a faulty nervous system previously, and there had been no manifestations of organic or functional disorder, with the exception of a feeble digestion.

Meralgia paresthetica, Dr. White said, was a condition always confined to the position occupied in this case. It was first described some ten years ago by Bernhardt and Roth, and now found a recognized place in the works on nervous affections, although, apparently, of rare occurrence. We had little definite knowledge of the causation of this well-defined affection. The morbid conditions with which it was said to be often associated, namely, neuritis, tabes, rheumatism, gout and alcoholism, were absent in the case reported by the speaker. The condition seemed to be outside the control of remedies, although massage had given partial and temporary relief in some cases.

THE INCUBATION PERIOD OF SYPHILIS.

Dr. ARNOLD POST, of Boston, Mass., read this paper. He stated that our knowledge of the incubation period of syphilis depended upon clinical observation, and the results of experimental and accidental inoculation. Clinical observation in this matter had the peculiarity that it was based not upon what the observer saw, but entirely upon the statement of the patient. Very few patients were at all reliable as observers. They forgot exact dates, and were influenced by their own preconceived ideas. After reviewing the sources of our knowledge on this subject from accidental and experimental inoculations, Dr. Post said that the recent inoculation of the anthropoid apes with syphilitic virus had opened up a new field of study. Melschinkoff and Roux had reported twelve successful inoculations, seven from human syphilis, upon chimpanzees. In these cases, the incubation period was reported in six as twenty-two, twenty-two, twenty-six, thirty-three, thirty-five and thirty-seven days, an average of between twenty-nine and thirty days, and none below twenty-two days. These inoculations of the human virus on chimpanzees were recognized as successful by Fournier and other competent authorities. So far as experimental inoculations were concerned, we were justified in believing that the true chancre always had a period of incubation; that this period varied within rather wide limits; that it never fell below fifteen, or possibly thirteen days, and that forty-two days was the widest limit.

Dr. J. NEVINS HYDE, of Chicago, Ill., said that with the aid of his colleague he had recorded more than two hundred cases of physicians and nurses who had been the victims of extra-genital chancres, and

the period of incubation in those cases coincided very closely with the conclusions reached by Dr. Post.

Dr. RAYCOTT said that the incubation period probably depended to some extent upon the quantity of the virus or germ with which the patient became inoculated.

Dr. ROBERT W. TAYLOR, of New York City, said that the cases on record in which the incubation period of syphilis was given as ten days or less were perhaps based upon the presence of broken-down herpetic vesicles, which were mistaken for beginning chancres. At all events the question would probably soon be definitely settled by the results of the experiments that were now being carried on with the anthropoid apes.

NOTES ON THE TREATMENT OF EPITHELIOMA BY MEANS OF CAUSTIC POTASH.

Dr. ARTHUR VAN HARBURG, of Philadelphia, Pa.: The author's conclusions on the subject were as follows:

(1) A certain number of cases of epitheliomata of the skin were best treated by means of caustic potash. (2) These cases comprised the small, well-defined, pearly lesions, from 3 to 1 or even 2 cm. in diameter, chiefly found upon the face and adjacent parts. (3) Larger lesions were best treated by the x-rays, but here caustic potash might be used to soften and dissolve the horny epithelium, and perhaps in some cases as an adjuvant. (4) In cases treated by caustic potash, the use of the x-rays did not appear to hasten the process of reparation, or to modify the cicatrix resulting from cauterization.

THE LIFE HISTORY OF A CASE OF MYCOSIS FUNGOIDES.

Dr. GEORGE T. JACKSON, of New York City, said that through the courtesy of Dr. F. S. Hope, of Portsmouth, Va., he had had the privilege of noting the clinical course of a case of mycosis fungoides from its beginning to its lethal ending. The patient was an unmarried woman, thirty-three years old, a native of the United States, and a person in easy circumstances. Her father had an epithelioma of the face, and many of his family were rheumatic. When Dr. Jackson first saw the patient, on Nov. 27, 1901, she was spare of flesh but in general good health. The only organic disease of which she complained was an irritability of the bladder. The duration of the mycosis was exactly five years. The disease first showed itself in August, 1900, and the patient died in August, 1905. The eruption was macular and scaly, with but slight tendency to tumor formation. Pruritus was a marked feature of the case. The application of the x-rays controlled the pruritus and caused a disappearance of the lesions, but produced excessive hyper-pigmentation of the skin, and possibly an exfoliative dermatitis. A chronic enteritis caused death by exhaustion.

To be continued.

SECTION ON GENERAL MEDICINE OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.

STATED MEETING, JANUARY 8, 1906.

THE PRESIDENT, Dr. SAMUEL McC. HAMILL, IS THE CHAIR.

CLINICAL EXPERIENCES WITH ENDOCRINE GLANDS.

Dr. GEORGE DOCK, of Ann Arbor, referred to the frequency of simple goitre in Michigan, and its milder grades, and said that exophthalmic goitre also seemed to be unusually prevalent. Out of about

4,000 medical patients, 32 had exophthalmic goitre. Cretinism and myxedema are rare in that section. Twenty-nine of the cases were women, three men. All had distinct cases of Graves' disease, though some had been incomplete part of the time under observation. The youngest was nineteen, the oldest fifty-five. The histories gave comparatively little proof of the relation of shock, worry, care, etc. In twelve cases there was a goitre long before the other symptoms came on, from three to thirty-seven years. Goitre was present in all cases, but small in three, and not known to the patients in some others. The conditions of the heart, great vessels, eyes, skin, nervous system, etc., showed no great departure from the well-known type. Blood pressure observations showed a great difference in systolic pressure. In many cases it was high, up to 160 to 180, and others as low as 100. There was no great change of blood pressure under treatment. The blood showing anemia in comparatively few cases, the most striking feature being relatively few leucocytes. Observations on gastric juice showed hypochlorhydria in a number of cases, with good motility but low peptic power. One patient died from the disease; one died from pelvic suppuration. Of 14 still under observation or heard from the disease showed considerable variation in duration. Several patients are well enough to do their usual work, but none are entirely free from signs. Dr. Dock spoke of the importance of careful diagnosis in mild cases; many that can be readily detected are treated for anemia, nervous prostration, palpitation, etc. Dr. Dock spoke briefly of the pathology and pathological anatomy and of the prognosis. Under treatment he called especial attention to the importance of rest, diet, rational mode of life and systematic treatment as indicated. Some experiments with thyroidectomy and other organic products were described, showing that none of these substances are as yet satisfactory. X-ray treatment was used in two cases, with very little effect on the goitres and none on the other symptoms.

DR. JAMES TYSON discussed the

MEDICAL TREATMENT OF EXOPHTHALMIC GOITRE

which he said was, at best, unsatisfactory, because there could be no scientific treatment so long as there was a limited definite knowledge of its pathology. If, as seemed probable, the disease was due to a deranged secretion of the thyroid gland, experience with analogous diseases suggested the possibility of the discovery of an antitoxin which would counteract the symptoms. This idea was strengthened by the results of the studies of Drs. Rogers and Torrey, of New York City. On the other hand, it was well known that cases of exophthalmic goitre recover without the aid of such specific agent. In his experience he had known of but one fatal case. Many cases had passed from under his observation either totally or partially unrelieved. In the treatment he stated that patients should have rest, and protection from excitement. In mild cases of short duration this alone might effect a cure. Alcoholic stimulants and stimulating indigestible foods are contra-indicated. Food, however, should be nourishing. Prohibition might sometimes extend to tea and coffee. Sexual indulgence should be disjoined. The bromides and digitalis should be given in moderate doses at first; indeed, massive doses are contra-indicated, and if the tachycardia does not subside under moderate doses of digitalis or strophanthus, they should be discontinued. Ten or fifteen mm. of the new tincture three or, at most, four, times a day should not be exceeded. Of the bromides 15 gr. four times a day

was considered the maximum dose. He has found veratrum viride in lieu of digitalis to act well in conjunction with bromide; in like manner aconite may be expected to be of service where there is strong cardiac action. He has had no experience with ergot. Belladonna is useful in certain cardiac cases and he especially advocates the use of a fresh belladonna plaster over the region of the heart.

He quoted Prof. William H. Thomson as ascribing Graves' disease to gastro-intestinal ptomaine poisoning, due to excessive meat ingestion, and, accordingly, insisting upon the absolute restriction to a milk diet for two years.

The undoubted relief afforded by operative treatment in certain instances, on the other hand, would seem to show that if the symptoms were due to a toxin, that toxin is developed in the thyroid gland itself. Among other special treatments was mentioned that by suprarenal extract recommended by Dr. James C. Wilson, in the tablet form, 5 gr. at a dose. Treatment by thyroid extract, theoretically, should make the disease worse, and experience tends to confirm this, though such result has not been invariable. On the other hand, reference was made to some evidence that thymus extract has seemed to be beneficial in 10 to 15 gr. doses. Reference was made to the efficacy of nuxvomica in a case under the care of Dr. Hunsberger, of Skippack, Pa. Dr. Tyson would expect codeine to be superior to opium. Iodides were mentioned as of doubtful value, but iron and arsenic should be beneficial. He has been rather skeptical of the results claimed for electricity and he has had no experience with it. Brine and Naheim baths he would expect to be helpful, and probably, too, massage, although the latter should be gentle at first and discontinued if not well borne. The rationale of all measures recommended other than antitoxic must be that they are such as maintain the healthful functions of the organism, while it is its excretory organs casting out the toxic agencies which are responsible for the disease. The operative treatment and the antitoxic treatment when discovered does this more promptly, but some 14th, it is said, perish of the operation.

DR. W. G. MACCALLUM, of Baltimore, discussed the

PATHOGENESIS OF EXOPHTHALMIC GOITRE

and said that the weight of evidence is in favor of the view that the thyroid plays a predominant rôle in Graves' disease. The changes in the thyroid, however, are due to another primary cause. Several recent authors have claimed that there is no specific histological alteration of the thyroid in this disease (Reinbach, Kocher), but in the series under Dr. MacCallum's observation the well-known changes have been constant, but not always in the same intensity. In some early cases or in mild cases the change is focal, small patches of tissue showing the irregular alveoli, high epithelium and loss of colloid, while the surrounding tissue is practically normal. Such changes might be overlooked, especially if the patient had also a colloid goitre, as so often occurs in Switzerland. He thought it difficult to prove that the thyroid secreted more actively than normal, but the histological appearance is that of thyroid tissue which is hypertrophied in response to the operative removal of a large portion of the gland. Further, the blood supply, he said, was excessively rich, and further administration of thyroid extract to these patients causes an exacerbation of the symptoms, while excision of part of the gland relieves them.

He stated that no conclusions could be drawn

relative to the amount of colloid secreted by observing coagulated material in the lymphatics, for that is probably lymph plasma. Breuer, he said, claims that the symptoms of exophthalmic goitre may be simulated by chronic iodine poisoning and that even the whole clinical picture may be so produced. The solution of the problem of the function of the thyroid, he believes, probably depends upon the elucidation of the relations of iodine in the body. The primary cause of Graves' disease, he thought, seems to be some injurious agent or irritant which by causing destruction of part of the thyroid cell will cause the remainder to hypertrophy. The acute thyroiditis occurring in the course of infectious diseases might produce this effect and such infections are found to have occurred in a considerable proportion of the cases before the onset of the symptoms. Insufficiency of the parathyroid glands plays no part in the production of the disease.

Dr. JOSEPH C. BLOODGOOD, of Baltimore, discussed the

OPERATIVE TREATMENT OF EXOPHTHALMIC GOITRE.

A paper upon this aspect of the subject is shortly to be published in full by Professor Halsted.

Dr. WILLIAM OSER expressed his pleasure in meeting his "old chum," Dr. Dock, and his friends in the college. Regarding exophthalmic goitre he expressed his belief that medical treatment was not instituted sufficiently early. Since the disease was a serious one, not often cured and a distressing one to the patient, he thought it worth while, just as soon as the symptoms were manifest, to subject the patient to a rigid, thorough, systematic treatment of not less than three months' duration, in bed at rest, in the open air, ice bag on the chest and "drugs" — according to your taste. These he considered to be the essential features in the medical treatment of the disease, and this treatment yielded results, in a remarkable number of patients changed to fairly robust health. In the extreme cases, however, he believes that the surgical treatment offers by far the best hope of permanent cure. Personally he had been much gratified at the results obtained by his surgical colleagues in the cases which he had turned over to him, and thought it, probably, one of the most remarkable things in life to see within twenty-four hours after operation a patient transformed from a quivering bundle of nerves with a high degree of feline restlessness and a heart at 160, to a composed, quiet, rational individual, such as Dr. Bloodgood would remember in one of two remarkable cases of extreme Graves' disease of the most advanced type. He regarded the operation as a very critical, prolonged and dangerous one, and said that "when we physicians are handing over our very precious and increasingly diminishing number of patients to the surgeon," it was a very important question that the surgeon operating in exophthalmic goitre should know his business. He pointed out the extreme danger of operation under general anesthesia. It should be remembered that the fatal results following operation were not always due to the operation or to the surgeon, for in a certain limited number of cases there might be acute toxemia.

Dr. Dock, in closing the discussion, expressed his thanks for the kindly reception of his paper, his pleasure in hearing Dr. Bloodgood's description of the surgical treatment, and in having heard Dr. Oser who had put the matter in his own inimitable way.

He referred briefly to the subject of iodism, which he said was an extremely important symptom in the middle of the last century because of the use of iodine

for all sorts of diseases. An enormous literature had been developed in which might be seen pictures of acute exophthalmic goitre. By one authority this had been attributed not to the iodine but to a poison derived from the thyroid.

He emphasized Dr. Oser's caution for care in the selection of the surgeon who should operate in exophthalmic goitre. While heartily in favor of surgical treatment in certain cases he felt that the disease was one in which in certain other cases much could be gained by medical treatment.

THE SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

EIGHTEENTH ANNUAL MEETING HELD IN LOUISVILLE, KY., DEC. 12, 13 AND 14, 1905.

(Concluded from No. 13, p. 353.)

THE SURGICAL TREATMENT OF FLOATING KIDNEY; POST-OPERATIVE RESULTS.

Dr. FLOYD W. McRAE, of Atlanta, Ga., argued for surgical intervention rather than attempted support by bandages or corsets, but urged careful selection of cases for operation and the recognition of correction of associated pathological conditions. Especial attention was called to the frequent coincidence of floating kidney and chronic or recurring appendicitis.

The author described a new muscle-splitting operation, delivery of the kidney, partial decapsulation, the making of a broad quadrilateral suspensory ligament, by dissecting forward the fibrous capsule from near the hilum to beyond the convex border of the kidney. A mattress suture was put in each angle of the capsule, near the hilum, from which the suspensory ligament had been dissected, and including the reflected flap from either pole of the kidney. These sutures were passed deeply into muscles of the back, high up, so as to bring the kidney well into the hollow of the loin and close up to the twelfth rib. The quadrilateral suspensory ligament was next brought up between the separated muscles and held there by two silkworm gut sutures passed through all the structures from within out. A cigarette drain was placed between these sutures and the remainder of the wound closed in layers with interrupted catgut sutures. Care was taken to avoid injury to diaphragmatic and iliohypogastric and ilioinguinal nerves. The operation was illustrated by drawings. Twenty-two cases were reported.

CHRONIC ENDOCERVICITIS, A NEW METHOD OF TREATMENT WITH NEW INSTRUMENTS.

Dr. DANIEL H. CRAIG, of Boston, Mass., said that the diagnosis was made to depend upon the condition of contraction or relaxation of the internal os. If with an ordinary Simpson or Sims uterine sound, distinct resistance was encountered at the internal os, in the absence of flexions, the inflammation was confined to the tissues external to the internal os. If, on the other hand, the internal os was distinguished with difficulty or not at all, because of its relaxation and wide caliber, the inflammation was above the internal os, which was thus widely dilated to favor free drainage and to guard against back pressure. Treatment by Craig's method should be strictly confined to those cases in which the internal os was distinctly contracted.

The author's treatment, or operation, consisted in inserting the cervical canal up to, but not beyond the internal os with a specially designed dilator, and dilatation of the external os with a conical dilator, also specially designed for this purpose. The opera-

tion was quickly and easily performed at the office of the gynecologist without the use of anesthesia, except occasionally a few crystals of cocaine at the external os, and without confinement to bed. The pain, when done without cocaine, was about the same as that due to the filling of teeth.

Inasmuch as the most rigid asepsis was requisite to render such ambulatory treatment safe, the author did not offer this little operation for the use of those not thoroughly familiar with surgical and gynecological manipulations, but for those who were able to establish and maintain a rigid asepsis.

The preparatory and after treatment consisted of three 1-5,000 formalin douches daily for three days before and for ten days after the operation, with avoidance of unusual exertion and abstinence from sexual relations. The cure was prompt and complete, only a relatively very few severe cases having required more than the original curettement.

Tubo-ovariitis or other concomitant disease, which might be aggravated or lead to a recurrence, constituted a contra-indication to treatment, except as an immediate preliminary to radical operation.

The treatment was not intended as a substitute for tracheloplasty, nor for uterine curettement in cases in which the disease had invaded the corporeal endometrium. The use of the author's method should not be attempted until the original paper had been read in detail.

FRACTURE-DISLOCATION OF CONDYLES OF THE FEMUR WITH BACKWARD LUXATION OF LEG.

DR. GEORGE S. BROWN, of Birmingham, Ala., reported a case in which he did an open operation seven months after the receipt of the injury. He resorted to subperiosteal resection of the fragments with reduction in wiring, which resulted in the cure of a bad deformity, and the limb of the patient was now normal except for half an inch of shortening.

The patient, aged fourteen, was injured in a football game at a small college, and was treated for three months for sprained knee. A skiagraph revealed fracture, dislocation of condyles. He walked for four months after this, with bad valgus and flexion of the leg on the thigh, before submitting to an operation. The limb and knee joint were restored to normal. There was bony union of the fragments in their dislocated position. Through a four-inch incision down the inner aspect of the femur, the lower end of which stopped short of the level of the knee joint, the periosteum was cut through and pushed downward, the union chiseled through, the broken surfaces resected and the leg brought forward on the thigh without opening the joint. The fragments were wired and the internal lateral ligament closed with kangaroo tendon. The skin was closed with a subcuticular suture of silk-worm gut. Owing to the first dressing being left too long, there was a superficial infection which did not interfere with the final good result.

THE TECHNIQUE OF APPENDICITIS.

DR. W. P. CARR, of Washington, D. C., said that no disease presented more varieties and more grades of severity than appendicitis. There were all shades between a mild catarrhal attack and a severe gangrenous case with diffuse peritonitis. It was apparent that no one method of operating would suit all cases. Surgeons must modify the technique to suit the case and the strength of the patient. In his first 100 cases he had 8 deaths. In his last 72 cases he had had but 2 deaths, and he believed the improvement in mortality was due to a fuller knowledge of the condition of the

patients and a suitable adjustment of the technique to those conditions.

For practical purposes he divided all cases of appendicitis into four classes: (1) Unruptured, uncomplicated. (2) Unruptured, complicated by other serious disease, such as nephritis, tuberculosis or myocarditis. (3) Perforated or ruptured—first thirty-six hours; patient in good general condition. (4) Perforated or ruptured—after thirty-six hours; complicated by diffuse peritonitis or by asthenia from long illness, or by other serious disease; patient in bad general condition.

Each class was discussed at considerable length.

As to the incision, it should always be either the gridiron or through the rectus muscle; otherwise, hernia was very liable to follow. There was but one objection to the gridiron incision; namely, it could not be greatly enlarged without cutting across the fibers of the internal oblique and transversalis muscles. This, he thought, should never be done. It was better to close the wound and open again through the rectus muscle if a very large opening became necessary. However, if this incision was well placed, it might be stretched with the fingers and a fairly large opening made through which any uncomplicated operation might be done. The stretching should never be excessive, as paralysis of the stretched muscle fibers might result, and hernia follow.

NEGLECTED APPENDICITIS.

DR. CHARLES M. ROSSER, of Dallas, Tex., conceded the safety of an acutely inflamed appendix while the pathology was limited to the structures of that viscus; but the serious mortality following cases not so treated justified a classification of those passing the initial stage as being neglected, whether the delay was due to indifference, ignorance or cowardice, and whether the responsibility was upon the family, patient or medical adviser. The safe time limit would vary with the character of the attack of inflammation, the skill of the operator and the resistance of the individual.

The author considered the question of whether to operate settled affirmatively; that when to operate was agreed to, if early, but he proposed the question of who shall operate and what operation shall be done.

While appendectomies were occasionally simple in performance, yet they were prospectively delicate, and the patient was entitled to the most skillful service available in each instance, and he thought the geographical distribution of competent surgeons was sufficiently general that there was hardly an excuse for an emergency operation by the attending physician if he were not so equipped.

He advised incision in all cases at all stages except those already moribund, and in which added insult to vitality would be immediately hazardous, and a class having reached complete adhesive protection, in which a relaxed rectal orifice indicated early rupture and discharge by that route. After incision the surgeon must decide whether to remove the appendix alone, removal and drainage, or whether drainage alone should be the operation of election. But as exploration could best determine an otherwise indefinite pathological progress, the patient should be given the benefit of the doubt.

LATE RESULTS IN THE TREATMENT OF INOPERABLE SARCOMA WITH THE MIXED TOXINS OF Erysipelas AND BACILLUS PRODIGIOSUS.

DR. W. B. COLEY, of New York City, gave a brief history of the development of the method, stating that he had used the mixed toxins of erysipelas and bacillus prodigiosus since 1892.

Up to the present time he had advocated the treatment practically only in cases of inoperable sarcoma, but in view of the experience thus far gained from his own cases as well as the successful cases in the hands of other surgeons, he believed it wise to use the injections in all cases after primary operation for sarcoma as a prophylactic against recurrence. In these cases, however, the dose should be much smaller, just sufficient to produce a very slight reaction, and the treatment should be continued for two to three months. He also believed it wise, in practically all cases of sarcoma of the extremities, to give the patient the benefit of a trial with the mixed toxins before sacrificing the limb by amputation. This opinion was based upon 12 cases of sarcoma of the extremities in which the treatment had been so tried, with the result that the tumor disappeared, and in 8 of the 12 cases the patients were alive and well from three to six years afterwards; two were well at the time of the last observation, at the end of one year; the other two were recent cases. Three of these 12 cases were personal cases. Eight of them were of the round-celled variety; 2, spindle-celled, and in 2 no microscopic examination was made, although amputation had been advised by prominent surgeons; 5 were sarcoma of the tibia; 1 of the fibula; 2 of the femur; 1 of the forearm; 1 of the humerus; 1 of the thigh, involving the periosteum; 1 of the calf of the leg. In all of these cases amputation had been seriously considered, but it seemed justifiable to give the toxins a trial before resorting to operation.

As to the final results of personal cases, of 34 cases which may be fairly classed as successful, in that the tumor disappeared under the injections with the mixed toxins, the type of the neoplasm was as follows: 12, round-celled, 16, spindle-celled, 2, mixed-celled, 1, epithelioma, 3, no microscopic examination made, but the clinical appearance, together with a history of recurrence, left practically no room for doubt as to the diagnosis.

The results in these cases thus far have been as follows: Four were well less than a year; 3 were well from one to two years; 3 were well from two to three years; 3 were well from three to five years; 23 were well from five to thirteen years.

In five cases a recurrence took place and finally proved fatal. In one of these recurrent cases the patient had remained well for eight years; in one three and a quarter years; in one two and a half years; in one, seven months; in one, six months.

These five cases of recurrence, the author argued, were important in that they furnished absolute proof of the correctness of the diagnosis and refuted the statements formerly often made in regard to the successful cases, namely, that there must have been an error in the diagnosis.

The writer stated that he had been able to collect 56 cases of complete or partial success obtained by other men, of which 17 were round-celled sarcoma, 11, spindle-celled, 2, mixed-celled, 3, endothelioma, 2, epithelioma, and in 18 no microscopic examination was made, or it was not recorded, but in all of these cases the clinical diagnosis was confirmed by a number of surgeons, and the patients were considered hopeless from an operative standpoint. The results in these cases were as follows: Thirteen were observed less than one year, in 6 the tumor disappeared and the patient remained well from one to two years, in 9 the tumor disappeared and the patient remained well from two to three years, in 12 the tumor disappeared and the patient remained well from three to five years, in 9 the tumor disappeared and the patient remained well from five to eleven years; in 5 cases recurrence took

place six months to two years later; 2 died during the treatment, one of pyemia due to staphylococcus infection; the other of septic absorption, the tumor being a large intra-abdominal sarcoma which had completely degenerated.

Dr. R. E. FORT followed with a paper on

LAMINECTOMY

in which he reported a case that he had successfully operated upon, with recovery of the patient.

The following papers were read by title: "End Results in Appendicitis Work," by Dr. Edward E. Balloch, of Washington, D. C.; "Two Cases of Vaginal Cesarean Section for Eclampsia," by Dr. John E. Moran, of Washington, D. C.; "Cesarean Section Necessitated by Obstruction of Pelvis by Right Half of Bicornate Uterus," by Dr. George S. Brown, of Birmingham, Ala.; "Penetrating Wounds of the Abdomen, with Report of Cases, including a Case of Traumatic Rupture of Congenital Cystic Kidney," by Dr. C. E. Caldwell, of Cincinnati, Ohio; "The Vicious Circle after Gastro-enterostomy," by Dr. John B. Deaver, of Philadelphia, Pa.; "Some of the Uses of Pelvic Massage," by Dr. Joseph Taber Johnson, of Washington, D. C.; "Recent Progress in the Surgery of the Vascular System," by Dr. Rudolph Matas, of New Orleans, La.

OFFICERS.

The following officers were elected for the ensuing year: President, Dr. George H. Noble, of Atlanta, Ga.; Vice-Presidents, Dr. Stuart McGuire, of Richmond, Va., and Dr. E. Denegre Martin, of New Orleans, La.; Secretary, Dr. W. D. Haggard, of Nashville, Tenn., re-elected; Treasurer, Dr. Chas. M. Rosser, of Dallas, Tex., re-elected.

Baltimore, Md., was selected as the place for holding the next annual meeting.

Recent Literature.

1. *Syllabus of Materia Medica*. Compiled by WALTER COLEMAN, M.D., Professor of Clinical Medicine and Instructor in Materia Medica and Therapeutics in Cornell University Medical College; Assistant Visiting Physician to Bellevue Hospital. Second edition. New York: William Wood & Co., 1905.

This small book of one hundred and eighty-nine pages is designed by its author to offer to students an outline of the essential facts concerning the more important drugs. The brief statements of the names, dosage and uses of various drugs are such as a student might compile for himself from a textbook of *Materia Medica*, and may prove useful for pocket reference. The grouping of drugs likely to lead to an exanthem, to reduce Lehling's Solution those affecting the color of the feces or the urine and those excreted in the milk may lessen the labor of the student in the compilation of such facts for himself. An addition to the previous edition consists of two new sections on Minor Toxin Actions and Toxicology. It does not conform to the new *Drugs Pharmacopoeia*.

Clinical Treatises on the Pathology and Therapy of Disorders of Metabolism and Nutrition. By PROF. DR. CARL VON NOORDEN, Physician-in-Chief to the City Hospital, Frankfurt a. M. Part VII. Diabetes Mellitus. Its Pathological Chemistry and Treatment. New York: E. B. Treat & Co. 1905.

This book constitutes the lectures delivered in the University of Bellevue Medical College, New York, under the Herter Lectureship Foundation. It is the best book of the series already published. Von Noorden's book on Diabetes in German has already gone through three editions, and these lectures now published in English represent not only the most recent work on this disease, but von Noorden's experience. The book will be found by all practising physicians a most helpful addition to their working library.

Dose-Book and Manual of Prescription-Writing: with a List of the Official Drugs and Preparations and the more important Newer Remedies. By E. Q. THORNTON, M.D., Assistant Professor of Materia Medica, Jefferson Medical College, Philadelphia. Third edition, revised and enlarged. 12mo. 392 pages, illustrated. Philadelphia and London: W. B. Saunders Co. 1905.

The book is designed by the author both for the student and the practising physician. It contains the usual statements concerning the composition and strength of official as well as the more important unofficial preparations. Separate sections are devoted to weights and measures, prescription writing, dosage, etc. The appendix contains a table showing the change in strength of important preparations, with a list of average doses for adults, in accordance with the new Pharmacopœia.

A Textbook of Pharmacology and Therapeutics or the Action of Drugs in Health and Disease. By ARTHUR R. CUSHNY, M.A., M.D., Aberd., Professor of Pharmacology in the University College, London, England; formerly Professor of Materia Medica and Therapeutics in the University of Michigan; Thompson Fellow in the University of Aberdeen and Assistant in the Pharmacological Institute of the University of Strassburg. Fourth edition, thoroughly revised. Illustrated with fifty-two engravings. Philadelphia and New York: Lea Brothers & Co. 1906.

This well-known textbook, so justly held in high esteem, hardly needs an extensive review. The author's conservative attitude and his reliance upon laboratory experiment rather than on empiricism for statements made concerning the action and uses of drugs makes the book equal if not superior to any other on pharmacology and therapeutics. The present edition is brought into accord with the new (1905) United States Pharmacopœia, and includes many references to the newer literature.

THE BOSTON Medical and Surgical Journal.

THURSDAY, APRIL 5, 1906.

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THE QUESTION OF HOMEOPATHY.

IN our issue of last week we published two papers, one by Dr. F. C. Shattuck, of the Harvard Medical School, on the "Value of Drugs in Therapeutics," and the other by Dr. Frederick B. Percy, of the Homeopathic Medical School, on "The Homeopathic Principle." These papers were read at a meeting of the Homeopathic Medical Society, and brought forth a discussion which should do something toward breaking down barriers and removing misconceptions. It is perfectly clear that medicine, both on its practical and theoretical sides should offer a solid front against the encroachments of manifest quackery. It is also evident that so long as a body of well-trained and conscientious men stand out on the basis of a single therapeutic principle, which they claim is of fundamental importance, such a consummation cannot be attained.

The present attitude of the great majority of thinking men toward the question of homeopathy is that its law of cure has not been proved, and that even if it were proved, this would in no sense justify a so-called separate school of practice. The fundamental difficulty is not a simple difference of opinion, but rather the use put to such a difference of opinion by our homeopathic brethren in maintaining a separate school of practice, with separate medical foundations and hospitals and all the appurtenances which go therewith. Judging from the discussion, to which we have alluded, and from the practice of many of its members it seems to be the opinion of the representative men of the homeopathic school, that the law of similars has merely a

limited application, and that, after all, it is still awaiting final demonstration, by modern scientific methods.

Dr. Wesselhoef's suggestion, therefore, that tests should be made under the most equitable conditions, might, from one point of view, meet with the approval of many interested in the best development of medicine. However such tests might result, we should remain of the opinion that in the present state of medical knowledge the whole field so far transcends the application of any single therapeutic principle whatever, that the name "homeopathy," with its false connotation in the popular mind, should be given up as standing in the way of medical progress. It is, after all has been said, somewhat absurd to add the adjective homeopathic to the honored name of surgery, ophthalmology, or in fact to any other field of medical practice, which at most in minor degree makes use of the homeopathic principle of treatment. It would be fairer, and it would certainly conduce to better feeling as well as to progress, if a name were dropped which implies far more than its significance warrants, as applied to a distinctive school of practice.

The false emphasis which homeopathy places on the superficial aspects of disease as distinguished from its fundamental character is a further misfortune. However useful symptoms may be as guides to treatment, we imagine few homeopaths would maintain at this time that the symptoms are the disease, and that we have fulfilled our duty as scientific physicians in limiting our inquiries to these superficial manifestations of underlying processes. We need now, as never before, to look at the great problems of disease from a broad standpoint and not with the inevitable prejudice which a special so-called "law" of treatment necessitates. Even if we admit the contention that the homeopathic idea expresses a fact and not a fancy, we see no justification for exalting it to a position which no other legitimate method of treatment has ever demanded.

We commend to our readers' attention the following statement of Dr. Wesselhoef: "We may discuss these things late and early, we may hold to our convictions, and yet, at the same time, we shall never come to an agreement unless we positively abandon all the old facts, and deliberately set about to create new ones, and these new ones under rules that shall be recognized as scientific by the entire profession, or at least that shall govern a method of observation open

to every doubter, every believer." Could such a method of procedure be carried out in good faith, without prejudice and on a sufficiently extended scale it might remove differences. Practically we do not feel very sanguine about its results.

But at the same meeting, Dr. Perry, one of the chief speakers, quotes with approval from Dr. E. C. Price as follows: "And finally, do not forget that nothing ever yet has modified in the slightest the truth of that eternal verity, the law of similars, and, to judge from the sublime verdict of the ages, nothing ever will. Its roots dip deep beneath the dust of remotest antiquity, and its branches reach out into the empyrean of coming time, bearing its leaves to all the ends of the earth for the healing of all the unborn nations of all futurity." This jars upon our modern prosaic sensibilities. It certainly does not savor of scientific method; it illustrates the spirit to which the profession at large objects and we think with reason; it does not ring true.

BOSTON TUBERCULOSIS HOSPITAL.

A VERY definite responsibility rests upon the recently appointed board of trustees of the proposed tuberculosis hospital to be established in this city. It is definitely settled that a certain amount of money is to be expended for the further relief of the tuberculosis situation; it is as yet not definitely determined what class of patients shall be admitted for treatment; and this is the crucial point which the trustees are forthwith called upon to meet. To those who have followed the matter during the past few years of agitation, the question permits of but one answer, and that is, that a hospital must be established for chronic cases. The early cases are amply provided for, whereas the so-called incurable cases have been absolutely neglected. They have gradually been excluded from our large general hospitals where formerly they were given a grudging consideration, so that now, apart from wholly inadequate accommodations at the Long Island Hospital, and a very few beds in the city proper, they are forced to spend their last months of life in their own homes, a menace to their families and neighbors. So far as public provision is concerned, the chronic and hopeless cases have been mercifully neglected in our enthusiasm to restore the moribund case to a measure of health. This has naturally resulted in a decreasing provision for the advanced cases, a state of affairs which should not be allowed to continue, if the city is to maintain

her position as a pioneer in the intelligent fight against the disease.

The present needs are, first of all, a hospital for the hopelessly advanced cases, and, secondly, for cases too sick to be received at the Rutland Sanatorium. There is absolutely no present necessity for further provision for early cases, which can be and are admitted to Rutland. With Rutland so near at hand there is no apparent reason why Boston should have a sanatorium for early cases of its own. If only cases favorable for "cure" were sent to Rutland there would be ample room there to meet the demand. As a matter of fact many others, probably about two thirds of the hospital population, are not, properly speaking, incipient, and should be cared for elsewhere. Both because there is room at Rutland and also because it would not be economical, but the reverse, it is undesirable and unnecessary to equip a Boston sanatorium for incipient cases, and it should not, therefore, at least for the present, be considered.

If, on the other hand, we turn to the needs of the advanced and hopelessly cases, a very different situation presents itself. There is no place for them, at all equal to the demand, and these unfortunates are the very cases which are most liable to spread the disease. The late case is too sick to dispose of his sputum; the family is crowded into one or two rooms; the rooms are almost inevitably infected, and naturally the disease is spread. Such persons are apt to become city charges, and must ultimately receive city aid, thereby bringing to the treasury an unnecessary expense. These are the cases which, from every point of view, need hospital care. Quite apart from the humanitarian aspect of the question, they are virulent sources of contagion and they are often so sick that they demand the attention of those who should be wage-earners, and thereby the tendency to pauperism is increased.

Experience has taught much with relation to the care of the tuberculous classes. It has, in the first place, through Dr. V. Y. Bowditch's early work, shown that certain very early cases may be cured, and that others may be materially benefited in this climate. It has also shown the need of checking the spread of the disease by removing the sources of infection, and it is to this last task that much of the work of the future must be directed. The first step is unquestionably to provide means of isolation for the advanced cases, and this opportunity now

offers itself as never before in this community. The trustees of the new hospital should have the power of transference of patients from Rutland to a new hospital for the advanced cases, when they can no longer be benefited at the state sanatorium, and also be empowered to place such patients at Rutland as may be fit for treatment there. In other words there should be co-operation between the state hospital for incipient cases and the city hospital for advanced cases. To constitute another hospital in Boston for early cases in the present state of the problem would therefore undoubtedly be a step backward, and would defeat what should prove a most beneficent means of further combating the disease. The need of a hospital for the chronic cases cannot be exaggerated; it is the unanimous opinion of all who have looked into the problem from a broad standpoint; it rests with the board of trustees to fulfil an obligation which it owes to itself and the entire community.

MEDICAL NOTES.

BEQUEST TO GERMAN HOSPITAL, PHILADELPHIA. — Among the charitable bequests left by the will of Andrew J. Dotger, a wealthy New York merchant who died recently, is \$10,000 to the German Hospital of Philadelphia.

PATERSON OPPOSED TO VACCINATION. — The city of Paterson, N. J., appears to be rather a benighted community. The board of health recently ordered that all the teachers and all the pupils in the public and parochial schools should be vaccinated, and it is stated that, in consequence of refusal to submit to this order, twenty teachers and several hundred children have been suspended.

BEQUESTS TO THE UNIVERSITY OF VIRGINIA. — It has recently been announced that gifts amounting to \$60,000 have been given to the University of Virginia. Fifty thousand dollars of this amount is from Charles Steele of the firm of J. Pierpont Morgan & Co., an alumnus of the university, and the remaining \$10,000 from Miss Helen Gould. This latter gift is to provide a ward for negroes at the hospital, and the entire amount will be used to complete the University Hospital, which will ultimately consist of five buildings.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, April 4, 1906, there were reported to the Board of Health of Boston

the following cases of acute infectious diseases: diphtheria 46, scarlatina 46, typhoid fever 2, measles 218, tuberculosis 50, smallpox 0.

The death-rate of the reported deaths for the week ending April 4, 1906, was 19.98.

BOSTON MORTALITY STATISTICS.—The total number of deaths reported to the Board of Health for the week ending Saturday, March 31, 1906, was 222, against 246 the corresponding week of last year, showing a decrease of 24 deaths and making the death-rate for the week 19.45. Of this number 124 were males and 98 were females; 214 were white and 8 colored; 137 were born in the United States, 79 in foreign countries and 6 unknown; 41 were of American parentage, 152 of foreign parentage and 29 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 41 cases and 1 death; scarlatina, 44 cases, 1 death; typhoid fever, 2 cases and 1 death; measles, 159 cases and 3 deaths; tuberculosis, 33 cases and 26 deaths; smallpox, 3 cases and no deaths. The deaths from pneumonia were 42, whooping cough 1, heart disease 22, bronchitis 7, and marasmus 3. There were 4 deaths from violent causes. The number of children who died under one year was 38; the number under five years, 65. The number of persons who died over sixty years of age was 50. The deaths in public institutions were 71.

There were 2 deaths and 1 case of cerebro-spinal meningitis reported during the week.

NO FURTHER TREATMENT OF CONTAGIOUS DISEASE AT RHODE ISLAND HOSPITAL. The trustees of the Rhode Island Hospital at Providence have decided that cases of contagious disease will no longer be admitted. It has furthermore been decided that a contagious ward erected on the hospital grounds by the city must be vacated on or before Oct. 1, 1906.

BILL AGAINST ADVERTISEMENTS OF VENEREAL DISEASES. The bill introduced before the Massachusetts Legislature by Dr. Richard C. Cabot and others looking to the prohibition of printing offensive details in connection with certain advertisements has been favorably reported by the Committee on Public Health. The bill is aimed especially against advertisements of cures for venereal disease with descriptions of symptoms.

BEQUESTS. In accordance with the will of the late Dr. William T. Bacon of the Yale class of 1868, and at the time of his death a resident

of Hartford, Conn., Yale University, the Hartford Medical Society and the Hartford Hospital will be the beneficiaries of his estate on the death of his widow. An amount approximating \$200,000 will be distributed between these three institutions.

GIFT FOR YALE UNIVERSITY.—It has been announced that the Anthropological Department at Yale is to be given the archeological collection of Dr. T. Mitchell Prudden of the class of '72. This collection was made in South Utah, Colorado, New Mexico and Arizona, and is made up of various fabrics, pottery, ornaments and objects of religious significance of the ancient Cliff Dwellers of those regions. Dr. Prudden also gives his notes and a map of the region covered. The collection is regarded as of very great value.

NEW YORK.

MEETING OF NEW YORK STATE ASSOCIATION FOR PROMOTING THE INTERESTS OF THE BLIND.

At a large public meeting held on March 29, under the auspices of the New York State Association for Promoting the Interests of the Blind, Mark Twain presided, the Hon. Joseph H. Choate made an address, Richard Watson Gilder presented an original poem, and a letter was read from Miss Helen Keller.

REMOVAL OF GERMAN POLIKLINIK. The German Poliklinik, a free dispensary, now located in East Seventh Street, is about to remove to the more capacious building at 137 Second Avenue, which was erected by Mrs. Oswald Offendorfer, and presented by her to the German Hospital and Dispensary Society, about thirty years ago. The Poliklinik, which was founded in 1883, is unique among the medical charities of New York in that its board of trustees is almost entirely composed of physicians.

DEATH-RATE. According to the completed records of the Health Department, which have just been made public, the death rate in the city in 1905 was 18.31 as against 20.34 in 1904. In 1903 the death rate was 18.19, the lowest as yet recorded. The lowest rate was in the Borough of Queens, 16.04. In the other boroughs the rate was as follows: Brooklyn, 17.57; Manhattan, 18.74; Richmond, 19.01; the Bronx, 20.25. The higher rate in the Bronx is accounted for by the presence of several large institutions, the majority of whose inmates are residents of other boroughs. The total number of deaths in the city was 73,714, in an estimated population of 4,024,780. The number of deaths from some

of the most prominent causes was as follows: Pneumonia and broncho-pneumonia, 9,783 (of which 4,126 were due to broncho-pneumonia); pulmonary tuberculosis, 5,535; Bright's disease and nephritis, 5,944; diarrhea and enteritis (under two years of age), 5,877; organic diseases of the heart, 5,140; violent deaths, 4,476 (of which 660 were suicides); congenital debility and malformations, 4,341; congestion, hemorrhage and softening of the brain, 2,891; cancer and other malignant tumors, 2,875; cerebrospinal meningitis, 2,025; diphtheria and croup, 1,544; 103,881 births and 6,352 still-born were reported during the year.

STATE BRANCH OF THE NATIONAL RED CROSS SOCIETY. — The Central Executive Committee of the New York State Branch of the National Red Cross Society announces that branches have now been established in New York, Kings, Westchester, Albany, Suffolk, Monroe, Oneida and Onondaga counties, and that similar branches are to be organized as soon as practicable in many other counties. The membership is composed of two classes, those who pay \$1 a year, or a life fee of \$25, and those who are willing to volunteer their services under Red Cross direction in great calamities.

JUSTICE TO A PHYSICIAN. — Before Judge McCarty, in the City Court, on March 23, Dr. Thomas E. Satterthwaite, Professor of Medicine in the New York Post-Graduate Medical School and a specialist in diseases of the heart, won a suit for \$160 for attendance in the case of Dr. Egbert Guernsey, a homeopathic physician who died about three years ago. Dr. Guernsey, who left a very large estate, was at one time prominent among the homeopaths of the city, but for some years before his death had practically retired from practice and was engaged in a number of business enterprises. The defendants attempted at first to show that the alleged services had never been rendered, and then, having been completely worsted in this contention, pleaded exemption on the score of the code of ethics of the American Medical Association, of which Dr. Satterthwaite is not a member. At the time of the latter's attendance the code had not been modified, as at present, and it certainly seemed grotesque that the old code should be advanced to cover the case of a homeopath. During the trial of the suit it was shown that both Drs. Neesen and Barclay, who, under the direction of Dr. Satterthwaite, carried out the Nauheim-Schott treatment for Dr. Guernsey,

who was affected with chronic heart disease, had presented bills and received payment for their services. Yet the estate absolutely refused compensation for the attendance of Dr. Satterthwaite, who for nearly fifteen years has abandoned general practice and devoted himself to special office and consultation work. Judge McCarty gave a very fair charge to the jury, and the latter, which was out less than five minutes, rendered a verdict for the full amount of Dr. Satterthwaite's bill.

DR. SARGENT ON WOMEN IN ATHLETICS. — At a meeting of the Public School Physical Training Society, held March 30, Dr. Dudley Sargent of Harvard was the principal speaker. In discussing the question, "What athletic games, if any, are injurious for woman in the form in which they are played by men?" he said, that in physical education women should not be expected to excel in exercises which are adapted to men; nor should they be required to teach athletics to men and boys, as is the case in some of the schools in the West. Such a requirement is not only injurious to the women, but equally so to the men. Let woman rather confine herself to the lighter and more graceful forms of gymnastics and athletics, and make herself supreme along these lines, as she has already done in esthetic dancing. Among the athletic sports and games likely to prove injurious to most women, if played in the form in which they are played by men, Dr. Sargent mentioned football, ice hockey, basket ball, pole vaulting and heavy gymnastics. These games prove injurious to women, he said, because of the limitations imposed by their physical configuration, the tendency to become masculine in form and character if they try to excel in masculine pursuits, and their inability to bear prolonged mental and physical strain. Nevertheless, such sports could be so modified as to meet the peculiar requirements of the sex, with the result that they could be played by women with reasonable hope of physical, mental and moral development. In a paper on "Athletics from a Biological Viewpoint," Dr. Luther H. Gulick, president of the Society, struck substantially the same note by saying: "I believe that athletics for women should for the present be restricted to sport within the school; that it should be used for recreation and pleasure; that the strenuous training of teams tends to be damaging to both body and mind; and that public general competition emphasizes qualities that are, on the whole, unnecessary and un-

desirable in women. Let us, then, have athletics for recreation but not for serious public competition."

Obituary.

DR. SELWYN A. RUSSELL.

By the death of Dr. Selwyn A. Russell, which occurred at his home in Poughkeepsie, after an acute illness of three days in which his physicians alternated between hope and fear, the world has lost a man who, by reason of rare mental ability, Christian character and refined personality, was beloved and respected by all who knew him.

After graduating from the Albany Medical College and studying in Vienna, Dr. Russell spent some time in travel. He was one of the intellectual men of Poughkeepsie, and his wide and intelligent view of the affairs of the world marked him as a conversationalist of unusual interest.

That those who knew him best felt that the world was better through his unselfish and spotless life, seems but a fitting tribute to his beautiful character.

Miscellany.

A MEMORIAL TO THE LATE DR. CHADWICK AT THE MEDICAL LIBRARY.

At a special meeting of the Boston Medical Library held on March 30, it was voted to accept the report of the committee appointed at the annual meeting in November to consider the subject of a suitable memorial to the late Dr. James Read Chadwick, the founder and for thirty years the librarian of the Library and to authorize the committee to raise funds to carry out its recommendations.

It is well known that Dr. Chadwick's chief interest was the periodical library. He worked early and late to complete the files and carried his want book constantly with him. Therefore the committee recommended that the periodical room be called the Chadwick Periodical Room and that a bust or a portrait of him with a suitable tablet be placed in the room.

The committee recommended further that a book fund to be known as the Chadwick Book Fund be raised to provide for the purchase of periodicals, completion of files and the housing of periodicals, a department in which the Library has always been lacking in means, a suitable book plate to be placed in every bound volume.

It was also recommended that a memorial window be placed in Holmes Hall Reading Room if the members of the Library shall approve a design presented and now to be seen in the hall.

The committee now appeals to the many friends of Dr. Chadwick in and out of the medical profession, for contributions to accomplish these

objects. A considerable sum is needed. In the single matter of the book fund it is pointed out that the purchase alone of the periodicals last year cost over \$1,500, the amount, by the way, of the Library's deficit for that year, and this takes no account of the binding. A book fund devoted to this purpose would be of the greatest assistance to the Library so dear to Dr. Chadwick's heart.

Contributions of any amount, large or small, may be sent to Dr. Clarence J. Blake, Treasurer, 226 Marlborough Street, Boston, or to any member of the committee consisting of Drs. Walter L. Burrage, Clarence J. Blake, Charles M. Green, James G. Mumford, Ernest B. Young.

"AMERICAN MEDICINE" BECOMES A MONTHLY.

As the result of action taken at the last annual meeting of the stockholders of the American-Medicine Publishing Company, *American Medicine* is to be transformed from a weekly into a monthly publication. The present able and vigorous editor, Dr. Geo. M. Gould, accompanies this announcement with the following editorial comments:

"The cause of independent medical journalism is growing more important each year, and recognition of its value and necessity is becoming more general in the profession. The professionally-owned journal conducted in the interests of untrammelled opinion and speech usually the sole medium of expression for the minorities through whom progress has always come, must necessarily encounter more difficulties than those periodicals which represent interests solely commercial, or are the mouthpieces of societies or other organizations, whether great or small. It is a matter for congratulation that there is always an emergence from such conditions into greater freedom and progress. Experience has shown, moreover, that most of what is best worth while in the profession has been accomplished through the efforts of independent professional journals, though too frequently the final details of the measures they have inspired or inaugurated must be left to the publications which, representing large professional bodies and hence more powerful financially, aided naturally with measures which have become popularized and thus represent 'majority' views. The profession is vitally concerned in the existence and power of its professionally owned journals, and a large part of this concern must be directed if it is fortified and directed to the cause of the independent medical journal. No effort should be spared to make recognition of these facts more general.

The editor needs a continuance and increase of professional sympathy and support. As a weekly, *American Medicine* has stood for the best of independent medical journals, and worse publications could be better pardoned. As a monthly it will flourish in the face of better ones and our best wishes go with it.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, MARCH 24, 1906.

| CITIES. | Reported deaths in each. | Deaths under fifty years. | CITIES. | Reported deaths in each. | Deaths under fifty years. |
|------------------------|-----------------------------|------------------------------|-----------------------|-----------------------------|------------------------------|
| New York | 1553 | 540 | Quincy | 3 | 1 |
| Chicago | 533 | 142 | Valhalla | — | — |
| Philadelphia | 586 | 157 | Glooucester | 4 | 1 |
| St. Louis | — | — | Pittsfield | 4 | 1 |
| Baltimore | 231 | 65 | Brookline | — | — |
| Cleveland | — | — | North Adams | 5 | 3 |
| Buffalo | — | — | Chicopee | 5 | 3 |
| Pittsburg | — | — | Northampton | 12 | 1 |
| Cincinnati | — | — | Medford | 2 | 1 |
| Milwaukee | — | — | Feverly | 1 | 1 |
| Washington | — | — | Hyde Park | 2 | 1 |
| Providence | 97 | 39 | Newburyport | 4 | 0 |
| Boston | 268 | 77 | Leominster | 2 | 1 |
| Worcester | 39 | 15 | Melrose | 2 | 1 |
| Fall River | 39 | 18 | Woburn | 2 | 2 |
| Cambridge | 23 | 6 | Marlborough | 4 | 1 |
| Lowell | 47 | 18 | Westfield | 4 | 1 |
| Lynn | 23 | 4 | Pearbox | 1 | — |
| New Bedford | 22 | 12 | Revere | 1 | — |
| Springfield | 18 | 1 | Clinton | 5 | 1 |
| Lawrence | 31 | 11 | Attleboro | 2 | 0 |
| Somerville | 16 | 2 | Adams | 1 | 3 |
| Holyoke | 15 | 1 | Garfield | 3 | 3 |
| Brockton | 13 | 2 | Milford | — | — |
| Malden | 16 | 4 | Weymouth | 4 | 1 |
| Salem | 14 | 4 | Framingham | — | — |
| Chelsea | 14 | — | Watertown | 2 | 1 |
| Haverhill | 11 | 1 | Plymouth | — | — |
| Newton | 12 | 4 | Southbridge | 2 | — |
| Fitchburg | 12 | 5 | Wakefield | 1 | — |
| Fauntleroy | 13 | 3 | Webster | — | — |
| Everett | 5 | 1 | | | |

CHANGES IN THE MEDICAL CORPS U. S. NAVY
FOR THE WEEK ENDING MARCH 31, 1906.

J. P. TRAYNOR, passed assistant surgeon. Detached from the Naval Hospital, Boston, Mass., April 10, and ordered to the "Southern" and to additional duty at the Navy Yard, Portsmouth, N. H.

F. M. MUNSON, assistant surgeon. Detached from the "Lancaster," April 12, and ordered to the Naval Medical School, Washington, D. C., for instruction.

—SHAW, assistant surgeon. Detached from the "Southern," April 11, and ordered to the Naval Medical School, Washington, D. C., for instruction.

J. W. BACKUS, assistant surgeon. Detached from the "Hancock," April 12, and ordered to the Naval Medical School, Washington, D. C., for instruction.

B. F. JENNESS, assistant surgeon. Detached from the Naval Hospital, Navy Yard, N. Y., April 12, and ordered to the Naval Medical School, Washington, D. C., for instruction.

E. R. MARSHALL, assistant surgeon. Detached from the Naval Medical School, Washington, D. C., March 31, and ordered to the Naval Station, Guantanamo, Cuba, and to additional duty on the "Monongahela," sailing from New York April 6.

T. G. FOSTER, assistant surgeon. Detached from the Naval Medical School, Washington, D. C., March 31, and ordered to the "Chicago."

F. M. SHOOK, assistant surgeon. Detached from Naval Medical School, Washington, D. C., March 31, and ordered to the Naval Hospital, Mare Island, Cal.

T. W. REED, assistant surgeon. Detached from Naval Medical School, Washington, D. C., March 31, and ordered to the Navy Yard, N. Y., April 10.

—HOEN, assistant surgeon. Detached from Chicago and ordered home to wait orders.

H. T. NELSON, JR., assistant surgeon. Detached from Naval Medical School, Washington, D. C., and ordered to the Naval Academy, April 10.

W. S. FROST, JR., assistant surgeon. Detached from Naval Station, Guantanamo, Cuba, and ordered home to wait orders.

G. S. HATHAWAY, G. H. McCUNNOX, assistant surgeons. Detached from Naval Medical School, Washington, D. C., March 31, and ordered to the "Constellation."

J. L. TAYLOR, assistant surgeon. Detached from Naval Medical School, Washington, D. C., March 31, and ordered to the "Yankee," sailing from New York, April 4.

G. M. OLSON, E. O. J. EYTINGE, F. E. SELLERS, assistant surgeons. Detached from Naval Medical School, Washington, D. C., March 31, and ordered to Asiatic Station, sailing from San Francisco, Cal., April 14.

C. B. MENGES, assistant surgeon. Detached from Naval Medical School, Washington, D. C., March 31, and ordered to the Naval Training Station, San Francisco, Cal.

M. E. LANDO, assistant surgeon. Detached from Naval Medical School, Washington, D. C., March 31, and ordered to the Naval Station, Tutuila, Samoa.

F. W. S. DEAN, J. R. DYKES, assistant surgeons. Detached from the "Oregon" and ordered to Washington, D. C., for special duty, thence home to wait orders.

F. G. ABEKEN, assistant surgeon. Detached from Naval Station, Tutuila, Samoa, and ordered home to wait orders.

P. S. ROSSITER, assistant surgeon. Detached from Naval Station, Honolulu, H. I., and ordered home to wait orders.

E. C. WHITE, F. H. BROOKS, R. A. WARNER, P. R. STALKER, E. U. REED, J. E. MEARS, F. L. WOODS, assistant surgeons. Detached from the Naval Medical School, Washington, D. C., March 31, and directed to wait orders.

E. O. HUNTINGTON, surgeon. Discharged from treatment at Naval Hospital, N. Y., and ordered to the Naval Recruiting rendezvous, New York, N. Y., April 12.

D. B. KEIR, surgeon. Ordered to Naval Medical School, Washington, D. C., April 14, for instruction.

E. H. MARSTELLER, surgeon. Ordered to Naval Recruiting Station, St. Louis, Mo.

F. A. ASSERSON, passed assistant surgeon. Detached from Navy Yard, N. Y., April 12, and ordered to Naval Medical School, Washington, D. C., April 14, for instruction.

J. M. MOORE, passed assistant surgeon. Detached from Naval Recruiting Station, New York, and ordered to Naval Medical School, Washington, D. C., April 14, for instruction.

U. R. WEBB, passed assistant surgeon. Detached from the Naval Academy and ordered to the Naval Medical School, Washington, D. C., April 14, for instruction.

G. M. MAYERS, assistant surgeon. Detached from the "Constellation," and ordered to the Naval Medical School, Washington, D. C., April 14, for instruction.

R. H. MICHELS, assistant surgeon. Detached from the Naval Recruiting Station, St. Louis, Mo., and ordered to the Naval Medical School, Washington, D. C., April 14, for instruction.

C. K. WINN, acting assistant surgeon. Detached from the Naval Hospital, Washington, D. C., and ordered home to wait orders.

C. G. SMITH, passed assistant surgeon. Detached from the Naval Hospital, Mare Island, Cal., April 10, and ordered to the Naval Station, Honolulu, H. I., sailing from San Francisco, Cal., April 14.

J. A. GUTHRIE, surgeon. Having been examined by a retiring board and found incapacitated for active service on account of disability incident thereto, is retired from active service, March 25, 1906, under the provisions of section 1453, Revised Statutes.

RECENT DEATHS.

DR. H. HOYLE BUTTS, a well known nose and throat specialist, died on March 27, in consequence of a deplorable accident. While shaving himself he was seized with an attack of vertigo, to which he was subject, and in the act of falling gashed his throat with the razor so severely that death resulted in a short time. Dr. Butts was graduated from the medical department of the University in 1885, and for a considerable time was an instructor in diseases of the nose and throat at the New York Post-Graduate Medical School. At the time of his death he was surgeon to the Manhattan Eye, Ear and Throat Hospital and Brigade Surgeon of the New York State Naval Reserve, with rank of lieutenant-commander.

DR. ALLEN H. OLIVER, for the past eight years assistant superintendent of the Presbyterian Hospital, New York, died suddenly in that institution on March 27. He was fifty-eight years old, and a native of New Orleans. A considerable portion of his life was passed in France, where during the Franco-Prussian War he served in the Garde Mobile. On his return to America he studied medicine, and was graduated from the University of Pennsylvania in 1882.

DR. GEORGE S. DEARBORN of Rockaway, Borough of Queens, N. Y., died from pneumonia on March 26, at the age of seventy-one years. He was born in Wintthrop, Me., and was a graduate of the Albany Medical College. He served as a surgeon in the Civil War and afterwards practised for twenty-five years in Oxford, Chenango County, N. Y. In 1889, he removed to Rockaway.

Address.

THE METHODS AND AIMS OF THE PHYSICIAN.*

BY EDWARD H. OTIS, M. D., BOSTON.

THE life of the active physician deeply interested in his profession is one so strenuous and exacting, and one which makes such insistent demands upon his time and strength, that there seems to be but little leisure and energy remaining to devote to general culture or to the development and practice of any favorite pursuit or wholesome pastime—a hobby of any kind outside of his profession. He is in danger (and a danger I think it is) of merging in one both his avocation and his vocation, the man and the profession, of becoming a physician and nothing else, or, at any rate, of reversing the order, as Emerson gives it, "first, man; second, citizen, and then doctor"; or of eliminating altogether the first two while devoting his energies to the last—the doctor.

True, it may be, that he is a very successful physician, and one of much reputation. That is the laudable ambition of all in the profession; but the cultured man, the man of broad sympathies and interests is unduly dwarfed. "Professional work of any sort," says Osler, "tends to narrow the mind, to limit the point of view, and to put a hall mark on a man of a most unmistakable kind. On the one hand are the intense, ardent natures absorbed in their studies and quickly losing interest in anything but their profession, while other faculties and interests (first) unused. On the other hand, are the bovine brethren who think of nothing but the treadmill and the corn. From very different causes, the one from concentration, the other from apathy, both are apt to neglect those outside studies that widen the sympathies and help a man to get the best there is out of life.

Of course, from the very nature of a physician's work, being so constantly associated with human life in all its infinite variety, he acquires a certain broadness of view and knowledge of human life which in a sense develops the man. He can never be as narrow as the recluses or hermits. Nevertheless, unless some time and effort are devoted to self-culture, physical and mental one is likely to become "a more or less well running misshapen machine," and not "rise above the common levels of professional existence."

Furthermore, the physician, in common with all other members of the community, has a duty as citizen, the second place in Emerson's triad, doctor, "first, man, second, citizen." He owes an obligation to the community in which he resides as well as to the state and nation of which he is an integral part. He is bound to do his duty as a citizen and contribute something in influence and effort to the welfare of his community. The opportunities for doing this are manifold and always at hand. For example,

in matters of public health, the physician is peculiarly fitted by his training to be useful.

It has come to be a common observation with us how, in many cases, the practice of medicine leaves its earmarks upon the physician, and so insidiously has this taken place, that he is quite unaware of it; and, moreover, these are not altogether pleasing or attractive stigmas. Like the dry-goods clerk, whose fingers unconsciously feel for the scissors in his vest pocket when away from his counter, so the physician may exhibit the shop habits which, as I have said, are not altogether attractive, outside of his office: the anxious look, the apparent inattentive attitude, certain inarticulate expressions of approval or dissent, the uncomfortable impression of always being in a hurry, and neglect of many of the fine little courtesies in intercourse with others are some of the common shop habits into which the physician may insensibly glide. In brief, it is carrying over into the general relationships of life the professional habits, the shop; the medical machine obscures the gentleman and dislocates his manners.

Again, in professional life itself one may be content with a very narrow and inadequate conception of what the aim of the physician ought to be. The lowest aim is simply that of acquiring as much practice as possible. In addition to obtaining the practice, the next degree is to acquire as much personal skill and experience as possible; and, thirdly, and the highest aim is, while endeavoring to acquire by all legitimate means the first two, to endeavor to contribute something to the sum of medical knowledge, to strive to render some return, however small it may seem, for the immeasurable contributions of those who have preceded him in the profession, and by which he is profited.

No physician ought to regard his mental capacity, and his professional equipment so humbly, or his opportunities so restricted, as not to think himself capable of doing some original work or following out some line of investigation. To spend a little time each day in thinking on new lines will develop the habit of originality, the rest for creating if I may so express it, and stimulate independent thought. "The habit of trying to take new views of things," says Dr. Weir Mitchell, "to regard nothing stated as beyond some one's bettering, perhaps yours. . . I assure you a good plan."

The experience and available opportunities of every physician will afford abundant suggestive material for such work. To verify or refute certain accepted or suggested methods of treatment or procedure, for example, through one's own carefully observed and recorded experience, is a certain work of some value, and adds to the patient's protection as well as relieving it of that imaginary shadow of doubt sooner or later overtaking the physician who only follows the practice of practice and never goes beyond it.

The allegation has sometimes been made that the physician is less religious than other men.

*Read before the Rutland Clinical Club, Feb. 22, 1906.

that, in common with those of other scientific pursuits, he is inclined to agnosticism or skepticism: faith comes hard to him; he has so constantly to do with the seen that it is hard for him to see that which is invisible.

That such is the fact, I can hardly believe, though the exigencies of his profession may prevent him from regarding outward religious ceremonies. "Doctors, if they are men," said Dr. Gordon recently in speaking to a company of physicians, "are in the sanctuary all the time." Of all men, the physician would seem to be in constant need of a sustaining power above and outside of himself. He is so frequently confronted with situations before which he stands helpless, that he must instinctively look above and beyond himself for strength and guidance. He must so often feel his utter helplessness in the presence of disease and death, and unless he recognizes an all-wise and overruling power, life must seem to him an inscrutable enigma, and the issues of life and death the mere play of chance. The great discoverer of mediate percussion, Laennec, "affords in his life," says Flint, "an instance among many others disproving the vulgar error that the pursuits of science are unfavorable to religious faith." "Atheism in any proper sense," says Dr. Emerson, "will seldom be the goal reached by the man before whose eyes the mysterious sacraments of birth and death, and all sad and tender relations of humanity daily occur, or who, by strong lens, extends his view into the hidden region where cells wander and divide and crystals form."

In making the plea for a broad and general culture in the physician, the objection may be urged, that his energies which ought undividedly to be devoted to medicine which to-day demands so much of its votaries, are dissipated, and by becoming better all-around men, we become less skillful and learned doctors.

A moment's reflection and a reference to the careers of physicians conspicuous for their professional eminence will, I am sure, show the fallacy of this objection. Diversity of mental occupation, change in intellectual activity, is quite as necessary as variety in physical exercise. No physician can concentrate his mind upon medicine the whole time without sooner or later becoming so "stale" that his mind loses its keenness of perception and ready power of analysis and synthesis. He must needs rest the medical thought center of his brain by giving it another form of exercise. Gladstone, as we know, had an incessantly active mind, and he maintained it in healthy working condition by a diversity of mental activities. It is said that when asked how he managed to be so constantly engaged in such engrossing intellectual problems and yet retain such vigor of mind, he replied that there was one road leading out of London which was straight and perfectly level, and he had observed that more horses fell exhausted in traveling this road than by the other avenues of exit from the city which were tortuous and hilly.

Let us call to mind some of the eminent physicians who were also more or less eminent in other departments of learning; Sir Henry Thompson was a distinguished special surgeon, and he also exhibited his paintings at the Royal Academy. Dr. John Brown, of Edinburgh, besides being a faithful and beloved physician, gave us those exquisite mosaics, "Rab and His Friends," and "Marjorie Fleming." Da Costa, in this country, gave the world perhaps the best book on "Medical Diagnosis" that has ever been written, and he was also an accomplished scholar, and in his charming address on "The Scholar in Medicine," he says; "It is the scholar through whom we are linked with sympathetic interests to other pursuits." The pre-eminent scholarship and learning, *general*, as well as professional, of Osler is an inspiration and example to us all. Dr. Holmes was a professor of anatomy and an original investigator of no mean repute, and we are all familiar with his literary contributions. Of an earlier period one can mention Boerhaave, Morgagni, Harvey, Watson, Trousseau, all scholars as well as eminent physicians. Doubtless we can recall men of our own medical time, who, while devoted to the highest ideals of their profession, were learned in some other department of human knowledge, science, literature, etc.

Let us now consider a little more closely and in detail the plan of the ideal physician's life, and, first and most important, his professional methods and routine.

Of course, the daily medical work will and should occupy the greater portion of one's time. Our avocation is the discharging of our duties to our patients with the best skill we possess, ever striving for greater skill, and with the fidelity of an acute conscience. But when this is done, we have not done all that our profession demands of us. In the remnant of time which remains, something in the way of professional advancement is required of us. To-morrow and ever to-morrow must find us possessed of a little more medical skill and knowledge than to-day. Some special investigation or research in that department of medicine which, for the time, has a special interest for us may occupy this remnant of time that I have previously referred to; or the reading of the recent medical literature in the journals or reviews, or some new book upon a subject which attracts us; or the works and biographies of the past masters in our profession may bring us wisdom and broadness of thought. Though new discoveries have introduced new and what we consider modern methods of investigation and treatment (though we shall discover that some of them are not so modern after all), yet the old masters, we must remember, possessed just as acute and well-trained minds as any of the modern investigators, and we can learn much, very much, from their acute and original way of observing diseased conditions and drawing conclusions. I have only to refer to Dr. Jacob Bigelow's "Expositions of Rational Medicine," published in 1858,

and "Nature and Art in the Cure of Disease," by Sir John Forbes, published a little earlier, to illustrate what I mean.

It is not only what a writer tells about disease and its treatment which is of value to us, but often quite as much his methods of thought and analysis; it is not only the thing done, but the mechanism by which it is done; not only the completed investigation, but the method of thought by which it was developed. Ambroise Paré's luminous experiments, John Hunter's original and varied investigations, Koch's incomparable discovery of the tubercle bacillus and his simple and lucid exposition of his results, all illustrate this.

No age has a monopoly of broad minds or original thinkers, although the thought material differs from one period to another.

Besides what is at hand for us in medical literature in our own vernacular, two other languages offer us treasures of inestimable value; namely, French and German. An easy reading knowledge of these two languages is not difficult to acquire, and a half hour daily with a grammar and lexicon, even without a teacher, will soon enable us to accomplish this, so that we can read medical German or medical French. At the present day no physician can aim at a high standard of medical excellence without the ability to read authorities in these two languages. Furthermore, a new language introduces us to a new world of thought, customs and traditions, and renders accessible the great masterpieces of literature of the respective countries. To read in the original Schiller's "Song of the Bell," "William Tell," or the "Piccolomini" is worth all the labor of learning the German language.

It is a legitimate ambition of the enthusiastic young physician to write something to report an important or exceptionally interesting case or series of cases, or a carefully worked out investigation, and whether or not one publishes such a piece of work, it is excellent practice to write it out, for there is nothing like writing to clarify one's ideas of a subject and enable him to present them in a lucid and logical way. "The use of the pen is, for many minds," says Mitchell, "needed to give definition to thought," and Ruskin says, "The greatest thing a human soul ever does is to see something, and tell what it is in a plain way." To acquire what is called "style" in writing, for without the style nothing either in medicine or other writing will be widely read, is of the utmost importance if one purposes to do much writing. But with practice, clear thinking and a definite knowledge of the subject, this can be attained; indeed, it finally almost comes of itself.

The working day is inexorably limited, and how soon the night cometh when no man can or ought to work, though many of us do encroach upon the hours of the night, when we can read or write without interruption. What, then, remains, one pertinently asks, for general culture, literary pursuits, or mental diversion? If we can do no better, we can follow the sugges-

tion of Osler and start a "bedside library" and "spend the last half hour of the day," as he says, "in communion with the saints of humanity." "A liberal education," he continues, "may be had at a very slight cost of time and money, well filled though the day may be with appointed tasks; to make the best possible use of your one or of your ten talents; rest not satisfied with this professional training but try to get the education, if not of a scholar, at least of a gentleman. Before going to sleep read for half an hour, and in the morning have a book open on your dressing table. You will be surprised how much can be accomplished in the course of a year." Osler gives a list of ten books which are admirable, but which naturally will not appeal to the taste of us all.

This list of Osler's is as follows: The Old and New Testament, Shakespeare, Montaigne, "Plutarch's Lives," Marcus Aurelius, Epictetus, "Religio Medici," "Don Quixote," Emerson, Holmes's "Breakfast Table" series.

As I have said, each one would vary this list somewhat according to his individual taste and liking. My list I should arrange something as follows: First, the Old and New Testament; second, Shakespeare; third, some favorite book of poems, as Tennyson, Whittier or Longfellow; fourth, some biography or autobiography, as, for example, that of Franklin, Boswell's "Life of Johnson," Hoar's or White's Autobiography; fifth, some portion of history which may for the time have a special interest for us; sixth, some book of travel or adventure; seventh, some favorite book of fiction, such as Scott, Thackeray, Cooper, Hawthorne, Mark Twain, "Lorna Doone"; eighth, "Don Quixote"; ninth, Schiller; tenth, Holmes's "Breakfast Table" series.

I used to know an austere old Calvinistic clergyman who told me that his pleasure and diversion came from reading Scott's novels through once a year.

Of times the physician will feel so weary and so mentally exhausted that he will gain the most refreshment from a good novel of action, like "Lorna Doone," or "The Three Musketeers," or find rest in the world of adventure such as Parkman or Prescott offers, for example, and so for the moment be transported to a new and strange world. For others under like circumstances, a familiar poem will soothe the nerves and ease "the cares which infest the day" to "fold their tents like the Arabs, and as silently steal away." And worth a exposure "Daffodils" and Tennyson's "Sweet and Low" will soothe the soul of a worried mortal and cause it to reach with delicious harmony.

"If I read my effort is no more than innocent entertainment," says George Brantley; "it is a worth while matter, weariness and mental exertion of day life is not at all the same as that wisely controlled by the books that attract and hold us fast, being so they are exactly suited to these books are the good books for us." B. C.

it is well to place alongside of this advice the equally wise words of Mitchell, who says, that "it is the law of the mental life that man grows to like what he does long enough and . . . if your choice for comrades are the master books of the world, you will in time find their company wholesome and attractive." "Like the best of earthly friends these great books are hard to capture. They repay the effort." "More than all," says Dr. Emerson, "busy though we be, don't spare to medicine all our reading time. Read about the heroes—our craft has been rich in them. We find in our dull road the shining track, and forget that we are footsore."

In common with all mankind, the physician needs some form of daily physical exercise if he would postpone to the extreme limit that degenerative period of life which sooner or later awaits us all, though not for us all at the Oslerian arbitrary age of sixty, I trust. For some, physical exercise may be obtained, to a partial extent at least, in the performance of medical duties: walking on our medical rounds; driving and sundry duties about one's home, gardening, for instance, if one practices in the country. For most of us, however, and especially for the city physician, some definite form of muscular exercise, as such, must be arranged for, if we would maintain "the energy of full vigor," and the kind of exercise will largely depend upon one's taste and inclination. For one person, horseback riding will be a favorite exercise. "A good rider," as some one has said, "on a good horse, is as much above himself and others as the world can make him." For others, there is bicycling, tennis, hand-ball, golf, or various kinds of work in the gymnasium.

I know a certain professor, emeritus, of the medical school, a man now over seventy and still active in his profession, who is a daily attendant at the gymnasium.

Still others will take their exercise in connection with some manual occupation, such as carpentry, wood turning, iron working, horticulture, etc. You remember the great Laennec set up a lathe in one corner of his apartment and amused himself in turning objects, and used to make his own stethoscopes. I have a colleague, a specialist of repute, who is a skillful worker in wood and iron.

Whatever the form of exercise decided upon, it should be taken regularly and under open-air conditions, or, at least, pure air.

Whether or not the young physician's work is a remunerative practice, or whether or not he has much private practice, he will find opportunity, if he is ambitious, in some direction of medical art or science for strenuous and unceasing endeavor, for he has entered upon the long race of building up his reputation and practice. He needs, therefore, a yearly vacation, a decided change, physical, social and mental, and the nature of this change will largely and must be largely determined by his inclinations and tastes.

"Claim your right to a vacation," says Dr. Emerson, "and drop medicine like a hot iron.

Your patients may grudge it you, but will reap their gain in it." For one person the forest depths are the most seductive, where one can fish, hunt and live close to nature. I know of a hard-working city physician who every year takes his fishing rod and gun, with some light literature, and buries himself for a month in the northern Maine forests, forgetting that he is a doctor, and telling those who ask his occupation that he is in the drug business.

To another, the desire for travel is irresistible. He yearns to see new and strange places and faces, to lead for a little while an aimless life and be only a looker-on of life's activities. For him the change of travel is the most diverting and fascinating. To see new sights by land and sea is inexpressibly refreshing. For the time being the old familiar life has gone and he revels in the new and strange environment.

Still others prefer to combine with the change some form of physical activity: a canoe trip, a bicycle or horseback journey, a mountain tramping excursion, a yachting cruise, on which one performs a good share of the work; a camera or botanizing trip. In the preface to his charming book, "Animal Snapshots," Lottridge says he has spent his vacations for years in the fields and woods photographing and studying animals of "fur and feather" in their native haunts; entering into their lives as much as possible in order to know their habits and wild ways; finding in this form of vacation an endless and ever-increasing source of both knowledge and enjoyment. "My ideal vacation," he says, and it is so true, "is one that affords healthful pleasure not only for the time being but for the remainder of the year; that furnishes something to which I can turn for recreation and enjoyment after the working day is over."

In whatever form one takes his vacation, the essential thing is to take it in the way you like, and to take it thoroughly, forgetting for the time both patients and medicine.

We owe it to our patients quite as much as to ourselves to take an annual change and return to our labors with that vigor and eagerness which rest and new scenes bring, and then are we in condition to do our best for our patients.

Thus far we have been considering the physician in his development as doctor and man. "None of us liveth," however well he may live, "unto himself," but each one owes a duty to our neighborhood and country as citizens. "Second citizen," is Dr. Emerson's order, and he adds, "The town will be the better if he [the physician] feels the responsibility of citizen he owes to it."

The citizen of this republic too often forgets that he is an integral part of it and is under solemn obligation to do his duty towards it as an intelligent citizen. I remember hearing our present eloquent governor refer rather scathingly to a physician of his acquaintance who apparently recognized no civic responsibilities even to the extent of voting.

Besides voting intelligently, the physician, as citizen, should be ready to hold office if it

appears to be his duty so to do or if he believes that by so doing he can raise the standard of civic government, or carry through some needed reform in his own community or town. It may be in the capacity of health officer, a member of the school board, or of the city council or legislature, the trustee of some institution that he is called upon to serve. I know of a professor of a medical school who has been for several years a most valuable member of the legislature, where as a member of the health committee he was enabled to use his professional experience and knowledge for the benefit of the whole state.

Furthermore, the physician, from his extensive acquaintance in his community, and the regard in which he is held, is in a position to materially influence his fellow voters in securing wise and wholesome legislation. It is not, moreover, incompatible with a high degree of medical excellence, to attain also eminence in political life, as Virchow and others have shown us.

Outside of politics, there are innumerable opportunities in every community which will readily suggest themselves to the public-spirited physician, where he can be most useful. I know, for example, the superintendent of a state hospital who is a director of a savings bank in his city. Professor Welch of Johns Hopkins University is a conspicuous example of a man eminent in professional attainments who is also ready and always doing service to the community and state, being at the present time, as we know, president of the Maryland State Board of Health.

Let us, then, not forget to be citizens while striving to achieve a high standard of professional skill and reputation. A man is a man and a citizen from his birth, and one becomes a doctor later on. Let us, then, not permit our birthright to be absorbed by our avocation.

In conclusion, a word as to the personality or individuality of the physician, that *tout ensemble* of characteristics and peculiarities which present us to the world as this, that or the other individuality, and through which we either gain its good will or repel its good-natured advances, and by means of which very largely we succeed or fail. Although one's personality is largely a matter of inheritance, temperament and early environment, and perhaps to a very considerable degree a fixed quantity, still it is susceptible of being polished, cultivated and freed from unpleasant peculiarities so that a pleasing personality may, to a large extent, be attained which is of inestimable value to the physician who is brought in contact with such a variety of other personalities.

"Look three times at the figure of the ideal physician to once at our poor copy of him," says our Dr. Emerson whose wise words I have frequently before quoted, and what kind of a personality would we have our ideal physician to possess?

First and foremost, he should be natural, not his own original personality so far as it accords with the characteristics and conduct of a gentleman. "Every man of true genius," says

Dickens, and it is true also of us who are only of the average, "has his own peculiarity." If one possesses a keen sense of humor, it is to be cultivated as a priceless possession; there is nothing like it to relieve the heavy burden of the daily task. Of what inestimable value was it to Lincoln, staggering under his almost insupportable burden; how often his "That reminds me of a little story" illumined a dreary and oppressive situation. A cheerful disposition, if it does not naturally exist, should be assiduously cultivated. An abundant optimism, the child of cheerfulness, gains us more friends than a too serious and severe contemplation of life. Good physical condition and a well-supplied appetite contribute very materially towards a cheerful, happy view of life. It is a common observation that a man of *embonpoint* is generally a more cheerful man than a thin one.

"Let me have men about me that are fat,
Sleek-headed men, and such as sleep of nights,
Yond Cassius has a lean and hungry look."

"I do not know the man I should avoid
So soon as that spare Cassius."

"He loves no play,
Seldom he smiles, and smiles in such a sort,
As if he mock'd himself, and scorn'd his spirit
That could be mov'd to smile at anything."

Tact is another invaluable attribute, and if not a natural possession, much, nevertheless, can be done to cultivate it. I have known a most conscientious physician, with the highest ideals of professional work, fail in obtaining merited medical preferment because he was totally lacking in tact. When we analyze it, we see that tact is largely only a thoughtful and ready consideration of the feelings of others. It is the "putting yourself in his place."

The physician must be chary of much speaking, particularly when patients or colleagues come under consideration. Any reflections upon the conduct of a colleague from a one-sided statement of the case is unfair to him and derogatory to one's self-respect. Silence is a virtue which the physician needs to cultivate liberally. "He who holds his tongue for a minute," says an Eastern proverb, "is wise with the wisdom of all time." And yet silence may be carried to an excess and lead to misunderstandings, particularly when dealing with intelligent patients, and in consequence we may be unjustly and harshly judged. The truth is to be told, but gently and with tact, accompanied with all the expressions of hope that the case will permit. It is often difficult to maintain a true balance between tenderness of heart and firmness and insistency of purpose, both of which qualities are in constant demand in dealing with patients.

Sympathy is also another essential of the many-sided personality of the doctor, but not effusive or pretended. "Make-believe sympathy," says Mitchell, "is a false coin most easy of detection." Sympathy, moreover, costs in nerve strain and exhaustion, and as in every thing else we have to give, we should not permit every one who is too lazy or weak to straggle

against his own misfortunes to "tap" us for it that they may indolently enjoy its solace. Familiarity with patients, either on our part or theirs, is always dangerous and is very likely to lead to the loss of respect on the part of the patient for us and our professional skill. "As a rule," says the wise physician, whom Mitchell quotes, "you will do well to let your patients be friendly, but be yourself careful how you make friends of them."

Withal, we must have infinite patience, and be possessed of what Osler so highly extols, imperturbability. "In full development," says he, "as we see it in some of our older colleagues, it has the nature of a divine gift, a blessing to all who come in contact with it."

And so, as we have seen, the physician must be many-sided. He must be very much of a man, very much of a gentleman, a great deal of a citizen and have his chariot ever hitched to the star.

"Who comprehends his trust and to the same
Keeps faithful with a singleness of aim,
Whose high endeavors are an inward light,
That makes the path before him always bright;
Who with a natural instinct to discern
What knowledge can perform, is diligent to learn;
Abides by this resolve and stops not there,
But makes his moral being his prime care;
Who doomed to go in company with pain,
And fear, and bloodshed, miserable train,
Turns his necessity to glorious gain;
In face of these does exercise a power,
Which is our human nature's highest dower:
Controls them and subdues, transmutes, beverages
Of their bad influence, and their good receives;
By objects which might force the soul to abate
Her feeling, rendered more compassionate;
Is placable, because occasions rise
So often that demand such sacrifice;
More skillful in self-knowledge, even more pure,
As tempted more, more able to endure,
As more exposed to suffering and distress,
Thence also more alive to tenderness."

Original Articles.

TRAUMATIC DEFECTS OF THE SKULL. THEIR RELATION TO EPILEPSY. A CLINICAL AND EXPERIMENTAL STUDY OF THEIR REPAIR.*

BY DUDLEY F. ALLEN, M.D.,

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THE *Saturday Evening Post* recently said, "The main trouble with the man who announces a new theology is that he forgets his quotation marks." In a similar manner the medical man who thinks he has fallen upon a new idea usually finds he has been anticipated by some one wiser than himself. Often he finds his idea is not only old but valueless.

After spending considerable labor in elaborating a method for repairing skull defects, the

writer finds that in certain details he has been anticipated by the publication of the Koenig-Müller method of bone grafting. The first operation by the writer, after the method to be described, was performed in Lakeside Hospital, Aug. 22, 1900.

Before discussing the question of the repair of defects of the skull, it may be well to consider the conditions making such repair desirable. These conditions relate chiefly to epilepsy, the result of traumatism. They should include also periodical attacks of dizziness, headache, numbness, palpitation of the heart, etc.

To determine accurately the relation borne by traumatism to the production of epilepsy is by no means easy. Many grave injuries to the skull are not followed by epilepsy or ill effects of any kind. Sometimes manifestations of the sort are so long delayed that it is difficult to show that there is any relationship between them. Doubtless there are many cases of epilepsy following trauma in which the trauma has been forgotten.

That epilepsy may, and often does result from trauma, seems to be a universal belief. As bearing upon this belief the statistics of injuries to the head during our Civil War are of interest. Of 167 skull injuries, 23 or 13.7% are on the pension list as suffering from epilepsy. In the Franco-Prussian war there were 571 cases of recovery from gunshot wounds of the skull. Of these 25 cases or 4.3% developed epilepsy. If to the cases of epilepsy are added cases suffering from periodical attacks of dizziness, numbness, trembling, etc., the number is raised to 26.7%. The fact that epilepsy of non-traumatic origin usually develops early in life makes it highly probable that in these cases there is a causal relation between the trauma and the epilepsy.

In discussing traumatic epilepsy it must be borne in mind that the symptoms may result, not from injuries to the skull alone, but to the brain as well. They may result also from the formation of new scar tissue as well as from hyperostoses. The stimulus to attacks of epilepsy may also arise from irritation to peripheral nerves.

If the commonly accepted view be correct, viz., that epilepsy often follows skull injuries, the important questions before us as surgeons are five: (1) Can they be relieved by operative interference? (2) At what period should such operations be performed? (3) What class of cases are suited to operation? (4) What are the defects of methods commonly in vogue? (5) What operative procedures are best fitted to give permanent relief?

In discussing the first question, viz., the benefits to be derived from surgical interference, one is met at once by the unreliability of the statistics. The published experience of any one surgeon is too limited to permit of positive conclusions. The collected experience of different surgeons is widely at variance. Douglass and Walsham formerly reported from 60% to 70% of cures

*Read at a meeting of the Boston Medical Library, Dec. 6, 1905.

following operation. Graf and Braun, after careful study, accepting as cured only such cases as had remained well for three years after operation, report from 2% to 4% of cures. Kocher¹ in considering this subject credits Bergmann with 20 operations and 6 cures, or, if the three-year limit be insisted upon, with 4 cures or 20%. Discussing the subject further he points out that results vary greatly with the conditions found at operation. In 19 cases of trephining, in statistics collected for Kocher by Schär, in which there were found pressing upon the dura, splinters or corners of bone, abscesses or adhesions, and in which these were removed, there were 68.3% of cures. Still better results were found to exist in cases in which the splinters of bone or scars found pressing into the brain were removed by dividing the dura. In the latter cases cure resulted in 88.8% of the cases. It is to be remembered, however, that Kocher classified under the head of cured (*Heilungen*) cases showing positive improvement following operation, leaving out of consideration the question of final cure. In choosing the three-year limit as indicating cure, it must be remembered that there may be recurrence of epileptic symptoms after a still longer period of immunity.

Interesting as it would be to pursue still further a consideration of the possibility of curing epilepsy by operation, it would take us too far from the chief question to be considered in this paper, viz., *the prevention of epilepsy by the repair of skull defects*.

The second question is, At what period should operations for the relief of traumatic epilepsy be performed?

The prevailing opinion seems to be that early operation is highly desirable, and this is supported by such men as Champoussier, Gerster, Starr, v. Bergmann and many others.

There seems little question that by the continuance of any irritation which induces epileptic seizures, a condition is established which may continue even after the primary cause of the seizures has been removed. Thus, notwithstanding the fact that cures have been reported following operations for epileptic attacks recurring seven, ten and even eleven and seventeen years after injury,² still every consideration seems to point to the desirability of early operative interference in traumatic epilepsy, provided the cases seem to be suitable ones for operation.

The third question to be considered is, What class of traumatic cases is suited to operation?

The purpose of this paper is to show that all traumata to the skull resulting in bone defects should be repaired as soon as possible, not awaiting the possible development of epilepsy. This phase of the subject will receive consideration later on in the paper. The paper also seeks to show that should epilepsy follow trauma and the removal of bone be necessary

for its relief, the defect caused by operation should at once be repaired.

The fact is not forgotten that many of the gravest skull injuries may never develop epileptic or psychic disturbances. Two children operated upon, one by myself, and one by my late assistant, Dr. Nevison, fell from heights of about fourteen feet upon stone pavements, crushing in the entire vaults of their skulls and causing the most extensive fractures and depressions. In each case, by means of a sharp, curved, steel hook, the bone was lifted into place, the convexity of the cranium was re-established and the children recovered. One case I have followed about eleven years, and no ill effects of any sort have resulted. The second case has been lost sight of.

On the other hand, injuries apparently slight, may cause grave consequences. Unquestionably the cases promising most from operation are those in which the symptoms are the result of pressure upon the brain by spicules or edges of fractured bone, exostoses, scar tissue, etc. If the brain itself be injured, operative procedures promise less. Interesting as it might be to consider the benefits resulting from the removal of portions of the brain cortex as performed by Horsley and others in cases of Jacksonian epilepsy, it would take us too far from the purpose of this paper.

The indications for operation are well stated by von Bergmann.³

He says, (1) Operation is indicated in recent cases with infrequent attacks.

(2) In cases having manifestations described as Jacksonian epilepsy.

(3) In cases having upon the scalp, or skull evidences of previous injury.

The fourth question is, What are the defects of methods now in vogue?

Nothing will be said concerning the removal of brain cortex or of abscesses or cysts, and it is unnecessary to discuss the methods of removing bone.

For the removal of sections of bone, the exact area of which cannot be previously determined, and when the Omeca bone flap does not seem to be indicated, my preference is for the burr drill and the Lane bone forceps. The defective method to which it is desired to call particular attention is that of removing a portion of the skull and leaving the defect unrepaired. Kocher⁴ on the other hand, in closing his article on this subject, says, "Often it is not the opening, but rather the closing of the skull which causes harm." He advocates the incision and even the excision of the dura mater, in order to prevent the formation of a new bony covering of the defect, contending that the leaving of a vent (ventil) or even multiple openings tends to equalize intracranial pressure, and thus decreases the tendency to recurring attacks of epilepsy. In addition to his own experience he bases his opinion upon the observation of Schär and Beresovsky, of Moscow, to the effect

¹ T. Kocher, *Ueber einige Bedingungen objektiver Heilung des Epilepsie*, *Centralblatt für Chirurgie*.

² Bericht der Deutschen Gesellschaft für Chirurgie, 1899, pp. 40, 41.

³ Reported by Horsley, Taylor and Schiele. *Mitteilungen aus den Grenzgebieten der Medizin und Chirurgie*, 1899, p. 712.

⁴ *Handbuch der praktischen Chirurgie*, 8. Aufl., p. 321.

⁵ Kocher, *Loc. cit.*, p. 47.

that cases which have remained cured after operation for epilepsy were those in which defects in the bony covering had persisted.

Opposed to this view is the widespread experience that after operation epilepsy and allied conditions are often benefited temporarily, only to recur and be relieved again and again by subsequent operations. The conclusion seems evident that the recurring symptoms are the result of recurring pressure. To discuss this point at length would require more time than is at our disposal.

That epilepsy, the result of trauma, is to be relieved by a permanent skull defect seems wholly improbable. The establishment of the credibility of this view would require more facts than those advanced thus far by Kocher, much as his abilities are respected by every surgeon. In opposition to this view von Bergmann has pointed out the fact that epileptic attacks are often provoked by peripheral irritation, such as neuromata, foreign bodies in the ear, etc., conditions with which defects of the skull can have no connection. It seems probable that removal of pressure and the permanent repair of the skull, restoring its convexity and resistance to external injury, would be far more likely to be followed by permanent benefit.

The fifth consideration is, What operative procedures are best fitted to give permanent relief?

Many methods have been proposed for this purpose, and some of them have been employed for a long time. The method of closing defects in the skull by means of metal plates is one of long standing, but it is not satisfactory. Celluloid plates have also been used for the same purpose, but these also have not met general adoption.

Horsley in his operations for the removal of brain tumors employed the method of re-implanting the disk of bone removed by the trephine. This method has proved very successful and is applicable in cases where this disk of bone exists. The method does not, however, provide for the covering of old defects where there is no such disk of bone available. Macewen employed fragments of bone removed at the time of operation. These were placed in the defect and served as a scaffolding for the formation of new bone. This method has also proved successful in a certain percentage of cases, but numerous failures are reported.

Another method has been suggested by R. Porges.⁵ He reports a case in which as the result of cervical caries an opening in the skull existed 7 cm. long by 5 cm. wide. After incising and reflecting the skull the granulations covering the dura were removed. Over the dura two strips of celluloid were so placed that their extremities were wedged into the diploë, in order to retain them in position. The periosteum with the integument was then laid back over the strips of celluloid and the defect was thus covered and closed firmly.

⁵ R. Porges: *Centralblatt für Chirurgie*, 1903, p. 297.

Grekow⁶ of St. Petersburg, has made an extensive series of experiments in repairing defects of the skull. His method is to lay in the defect a thin sheet of thoroughly calcined bone. The bone may be obtained from any source. His observations are based upon a large number of experiments made upon various animals. By this means bone defects may be repaired. He says that bone under these circumstances grows from three sources: first, the diploë; second, the periosteum, and third, the dura. The calcined bone plate serves to prevent adhesions of the dura and periosteum and affords a scaffolding for the growth of new bone, which takes place generally from the periphery. He says that the method is effective in animals and in man, in lesions both old and recent. The process requires three months or more in animals and adult persons. His investigations are extensive and complete and seem to prove the success of his method.

Another method is that suggested by Müller,⁷ and employed by Koenig, being called the Müller-Koenig method. This method is, after laying bare the skull defect, to form a flap of similar size and outline from the adjoining portion of the skull. The skin and periosteum are left attached to the bone. By means of a cutting chisel the outer table of the bone lying beneath the flap is separated from the inner table and a flap thus created which is made up of integument, periosteum and fragments of bone, is transplanted so as to cover the defect.

Still another method has been suggested by Bunge.⁸ This is to form a flap in a similar manner, consisting, however, only of periosteum and fragments of bone similarly obtained. The base of the flap is preserved and the whole is transplanted so as to cover the defect.

At what time the Müller-Koenig method was first employed I have been unable to discover. That of Bunge is first described in 1903. Neither of the latter methods was known to the writer until a short time ago, long after the method to be described was successfully employed.

The method proposed by the writer for covering defects of the skull was first employed Aug. 22, 1900. It is as follows:

The scalp is removed from over the defect in the skull and the connective tissue covering the brain is carefully dissected away. Since the scar tissue and dura are often inseparable, the pia mater covering the brain tissue may thus be exposed over the entire area. In certain cases in which the injury to the brain tissue has occurred as the result of traumatism, it may be necessary to trim away a portion of the brain with the scissors, since the connective tissue may be firmly connected with the brain tissue itself. The borders of the opening are carefully examined to see if any portion of the bone projects downward, and if so it is removed by means of

⁶ Grekow: Contribution à l'étude des manques de substance osseuse du crâne, St. Petersburg.

⁷ Koenig: *Lehrbuch der Chirurgie*, 1903, p. 129.

⁸ Bunge: *Verhandlungen der Deutschen Gesellschaft für Chirurgie*, p. 37, *Centralblatt für Chirurgie*, 1903.

rongeur forceps. Any hemorrhage which occurs is carefully stopped, since it is an essential part of the operation that all hemorrhage should be controlled before the bone flap is inserted. When the surface upon which the bone flap is to be implanted has thus been made clear and hemorrhage has been checked, the scalp is removed from an added area of the skull of equal size with the opening. In doing this care is taken that the periosteum covering the skull be left intact. It is also important that the portion of skull laid bare be as thick as possible. Thus, the posterior parietal region is preferable to the temporal region. Upon the area thus laid bare a circular or elliptical incision is made, blocking out a portion of periosteum equalling in form and size the defect which is to be covered. A sharp, narrow chisel is then employed to split from the outer surface of the skull the portion of bone adherent to the overlying periosteum. To separate this bone from the skull the blows of the chisel should be short and quick so that the portion of bone split away reach no deeper than the diploe. In the removal of this area of bone with attached periosteum, the tendency, of course, is for the bone to be separated into small fragments, and to roll upward and outward. By placing the graft thus obtained between two gauze sponges moistened in warm normal salt solution and laying it upon the table, it may be flattened out by a few slight blows of the mallet. The plate of bone thus prepared is laid upon the opening in the skull, the bone being next to the brain. The wound is then closed by drawing over it the scalp and suturing it loosely in place. A cigarette drain made up of gauze and surrounded by gutta serena protective tissue is inserted through the incision at the dependent point, so that any excess of blood may be drained away into the dressing. The dressings are changed ordinarily on the second day in order to remove the cigarette drain, after which a second bandage is applied. This bandage remains in place for perhaps six or eight days longer or until the wound has entirely healed. By this method seven cases have thus far been operated.

ment greatly increased. The only hope of relief seemed to lie in the possible benefits of operation, the thought being that by relieving the pressure at the point of injury some benefit might accrue to the patient. He was admitted to Lakeside Hospital in March of 1898. His state of excitement was so great that it became necessary to place a guard over him day and night. At this time a portion of the skull, 4 cm. in diameter, in the right fronto-temporal region was removed,



FIG. 2.—Skull defect prepared for graft.

The opening was covered by the scalp and the patient was sent home. This general condition improved very greatly and he remained well for about two years, performing ordinary duties about his home. He came to the hospital again, however, on Aug. 22, 1900, the statement being made that he had recently developed mild excitement, in no way to be compared with that which had previously existed, but such as had made him desire to go to the State Hospital for the Insane at Massillon. In thinking the case over it occurred to me that since the patient had been so greatly relieved for the period of two years following his first operation, this might have resulted from the removal of the pressure upon the brain. Later, as the scar tissue contracted, it could have renewed pressure upon the brain, and thus have caused a return of excitability. In considering how the patient might be relieved, the method of bone grafting which has been described suggested itself. The operation was performed on Aug. 22, 1900, and the patient left the hospital on Oct. 6.

On June 27, 1903, nearly three years after this operation, he returned for re-examination, saying that since the last operation he had been entirely well. He further said that after he returned home the defect in the skull, which on discharge had been hard, appeared to grow softer, but that after a time it had become hard again. From this report it seems probable that the chips of bone adherent to the dura mater had been absorbed, but that later bone had been reformed. Examination at this time showed that the former defect was covered by solid material through which no pulsation could be felt and that there was no indication of increased pressure. The case, however, is therefore of interest because of the following facts: The patient remained perfectly well until the 25th of July, 1903, having occupied a respectable position, with entire satisfaction, to his employers. The responsibility

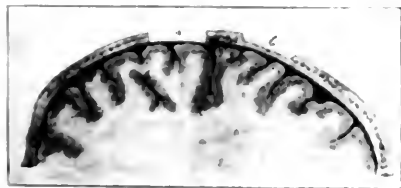


FIG. 3.—Section of skull, showing site of bone graft, case No. 2.

CASE I. F. H. Male. Aged, nineteen years. The patient had been injured on the right side of the head in November, 1892. After four and a half years, in July, 1897, he developed symptoms of excitability, which made it necessary to send him to the State Hospital in Newburg. Here his condition of excite-

was, however, large, and it seemed to be too much for him. He confided to a friend that he thought it would be impossible for him to be cured permanently and he deliberately ended his life.

CASE II. W. B. Male. Aged, seventeen years. The patient was admitted to Lakeside Hospital, July

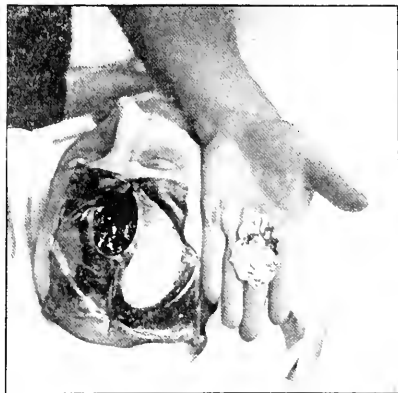


FIG. 3. Graft removed from area covered with white paper and lying bottom upwards in operator's hand.

10, 1903. The night before admission to the hospital the patient fell from a street car, striking upon his head. He was unconscious from this time until admitted to the hospital, eighteen hours after injury. He was very restless, complained of severe headache and also of pain in the back of his neck. Patient was in good physical condition. On examination of the skull the scalp over the vault of the skull was found to be edematous, but no depression could be felt. The eyes showed nothing abnormal. The patient continued to have severe headache. He was, however, conscious and did not develop paralysis of any sort. The pain, however, was so severe, that it was decided, on July 13, to open the skull. A crucial incision was made over the vault of the skull in the anterior parietal region. On exposure of the skull no distinct fracture could be made out. There was, however, a seeming separation of the longitudinal suture and the sagittal suture. By means of a burr drill and rongeur forceps a portion of the right parietal bone, just to the right of the median line, was removed. The opening was 9 cm. long and 7 cm. wide. Underneath the skull, lying between it and the dura mater, was an area filled with a blood clot, separating the dura from the skull a distance of 1 cm. This was quite adherent to the dura and was removed with some difficulty. No attempt was made at this time to close the defect in the skull itself by bone graft. The reflected integument and periosteum were brought back, united by a few sutures and room was left between the flaps for drainage. The patient made a rapid recovery from this operation and was dismissed from the hospital on Aug. 11, 1903. The large size of the opening made it seem wise to close this later on by a bone graft. Accordingly, the patient was re-admitted to the hospital on Sept. 19, 1903. Since the first operation the patient had suffered much from headache, particularly over the eyes and around the ears. He had done no work. When he tried to read he had pain in the eyes and also increase of pain in the head.

He had had, however, no epileptic attacks. On examination of the field of operation a depression could be felt, which became even with the rest of the skull when the patient was lying down. The operation for the closure of the skull was undertaken Sept. 21, 1903. A bone graft, secured in the manner described, was removed from beside the original defect and laid in place. The recovery was uneventful and the patient was discharged on Oct. 31.

The patient was re-examined Nov. 17, 1905. There was an irregular depression to be felt, corresponding to the original defect of the skull. The defect was about 8 mm. in depth, representing approximately the thickness of the skull at this point. On firm pressure there was no yielding of the surface and no pulsation was to be felt. The defect appeared to be repaired by the formation of new bone. The patient had been entirely relieved from headache and was perfectly well in every respect since the time of the second operation.

CASE III. W. J. C. Male. Aged, thirty-five years. Single. The patient was admitted to Lakeside Hospital, July 30, 1903. Previous history negative. In September, 1894, he was struck by a locomotive, and in falling hit his head upon a piece of iron. He was not conscious of his surroundings for about two weeks. During this time he was in the West Penn Hospital at Pittsburg, Pa. He says that the doctors considered his condition hopeless, and did not operate in any way. He was in the hospital for three months. There were no paralyses of any kind. Seven months after injury he had his first epileptic attack. These attacks recurred at intervals of about a month until

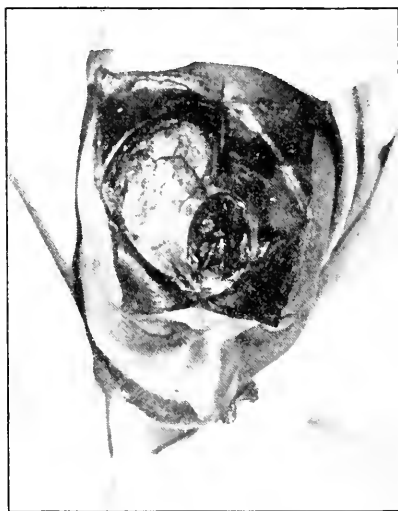


FIG. 4. Graft laid in position filling defect. Piece of paper shown in Fig. 3 removed to demonstrate appearance of skull after upper table (graft) has been taken off.

August of the same year, when his skull was operated upon by Dr. Buchanan of the West Penn Hospital. After this time his fits came back at intervals of about two months. A year later he was referred by Dr. Buchanan to Dr. Keen of Philadelphia, who declined

to operate. On Feb. 22, 1897, he was operated upon by Dr. McGrew of the Allegheny General Hospital. After this he improved so that he had only six epileptic attacks in the next six years. The last one was in March, 1903. On admission to Lakeside Hospital he was found to have an opening in the skull 5½ cm. wide by 6 cm. long. This opening was 2 cm. to the right of the median line and in the parietal bone above the right auditory meatus.

Operation was performed July 31. Crucial incision. On exposing the defect in the skull it was found to be filled with a thick layer of fibrous tissue. Embedded in this tissue was found a piece of gold foil which had been inserted at the last operation to prevent the adhesion of the scalp to the dura mater. The cicatricial tissue was found adherent to the dura through a portion of the wound. A bone flap, the size of the opening, was secured toward the median line and placed in the defect. This was then covered with a skin flap which was sutured in place except for a small opening for a cigarette drain. On Aug. 17, the patient had an epileptic attack lasting for about one minute. No further convulsions occurred and the patient was dismissed from the hospital on Oct. 26, 1903.

In January, 1905, the patient was re-examined. Excepting for one very small point where the surface yielded very slightly on firm pressure, the entire defect seemed to be filled with new bone. The patient was persuaded to permit an incision to be made in the scalp in order to determine whether new bone had been formed. This was done under cocaine. The knife came down upon a firm tissue which had every appearance of bone, being hard so that it could not be cut with the knife, and having a white and glistening appearance. It seems that there can be no question that the tissue thus found was bone. Since the last operation the patient has had two attacks of epilepsy, one Feb. 19, 1904, and another July 20, 1905. Aside from this he has been perfectly well and able to work. He was last examined March, 1906.

CASE IV. G. N. Male. Aged, twenty-eight years. Single. Admitted to hospital Oct. 10, 1903.

The patient was well until seven years before admission to hospital. At that time he fell under a horse's feet, and the horse's shoe penetrated his forehead. He was told "there were cracks in other portions of the skull." There were no immediate symptoms. Two weeks after the injury two ounces of pus were evacuated. Details of this operation were not given. This operation was followed by apparent recovery.

On Sept. 30, 1903, while talking with a friend on the street, patient says he experienced a peculiar creeping sensation, as of a rush of blood to the head. This was accompanied by pain in the right parietal region and a sensation of intense weakness. He remembers being placed in a carriage and taken home, but nothing more. On Oct. 2 he had a similar attack. He thinks he did not lose consciousness, but felt very weak after the attack and slept for some time. His physician, Dr. Ashmun, says that the attacks began with rolling of the eyes toward the left side, drawing of the left side of the face to the left and drawing of the whole head to the left. On examination a cicatricial scar was found in the forehead above the right eye. At the center of this was a slight depression corresponding to the loss of bone following the previous operation. The opening was said to have been originally about the size of a dollar, but its diameter had been decreased. The site of the old injury was laid bare by a semicircular flap. The cicatricial tissue was removed from the site of the old injury and the edges of the bone were refreshed with the rong-

eur forceps. The surface of the brain was found to be infiltrated with connective tissue at the site of the former abscess, so that normal brain tissue was not seen. A bone flap was then secured above and to the outer side of the opening, and the wound was closed with suture except for a cigarette drain. On Oct. 14, the patient had a convulsion at 7 a.m., followed by six others during the day. His attacks resembled those occurring before operation. After that time patient had no recurrence of epileptic seizures. The recovery was uneventful and the patient left the hospital on Oct. 31. Examination at this time of the point of operation showed that there was considerable resistance to pressure and that there was no pulsation. Patient was examined March 21, 1906. He is in business and has been perfectly well since the time of his operation.

CASE V. H. C. Male. Aged, thirty-two years. Admitted to the hospital Nov. 21, 1904.

Patient had been in good health until fifteen months before admission to the hospital when he was kicked by a horse in the right temporal region. He was rendered unconscious and the skull was fractured. At this time an operation was performed and three pieces of skull were said to have been removed. The wound healed promptly. Four months after his injury he had his first convulsion. At first these occurred at intervals of about two months. The intervals then became shorter until it was but two weeks, but of late the time between the convulsions has been somewhat increased. The attacks came on with dizziness and a feeling of numbness over the entire body. He thinks that he also turned his head to one side as the attacks came on, but does not know which side. He remained unconscious for about twenty minutes and was light headed for two hours afterward. Patient is a well-developed man. There is a defect of bone in the right temporal region. It is about 1 cm. long and 1½ cm. wide. Operation was performed Nov. 26, 1904. The defect was laid bare by an incision through the scalp and pericranium. The edges of the bone were found to be markedly depressed and were removed with forceps. No scar was found in the dura mater. The original incision was then cleared, a bone flap was secured above the site of injury and placed in the wound. On Nov. 27, the patient had a convulsion at about 5 p.m. during which he was unconscious for fourteen and one-half minutes. This occurred at 9 a.m. From this time on the patient's progress was rapid, there were no more convulsions and he was dismissed with a firm cranium on Dec. 16, 1904. The defect was resistant to pressure and showed no pulsation.

A letter received from the patient Nov. 16, 1905, says that on July 24, of this year, he had an epileptic attack, the only one since his operation. Since that time he has not felt as well, being light headed.

CASE VI. L. D. Male. Aged, eleven years. Admitted to the hospital Dec. 5, 1904.

The patient was a well-developed child. When two and a half years old he was struck upon the head by a six-pound object that he had a distance of thirty feet. The child was unconscious for five or six minutes. There was a wound in the head which healed freely, but the mother closed it by the use of plaster. No physician saw the case. At six years of age, after this injury, the child had a convulsion. There were convulsions repeated every two or three months and bore the characteristics of epileptic attacks. The child had his first epileptic attack at eight months before admission to the hospital, and after that his mother says that he was "crazy" for three days. Patient has also had "fainting attacks," and when

seized with these he falls down, the attacks lasting but a few minutes, and after these the boy complains of not being able to talk easily. The mother says sometimes he stutters after these attacks. His last "fainting attack" was the latter part of November, 1904. The boy is high tempered but not malicious.

On examination of the patient's skull a small scar about 2 cm. in length was discovered at about the junction of the occiput with the right parietal bone. Nothing further could be felt. The operation was performed on Dec. 9, 1904. A horseshoe-shaped incision, 7 cm. in diameter was made in the scalp. By means of a burr drill and chisel a piece of bone, $3\frac{1}{2}$ cm. long and $1\frac{1}{2}$ cm. wide, was removed. Although there was a slight depression in the outer table, no depression was found upon the inner table. The dura mater was incised but nothing abnormal could be seen upon the surface of the brain convolutions. A bone flap was chiseled from the skull behind the opening made by operation and the wound was closed except for a cigarette drain. The boy's recovery was uneventful until Dec. 17, and he was up and about the ward. On this day he was noticed to be breathing rather loudly and deeply. On examination it was found that he was unconscious, that his eyes were widely open and slightly rotated to the left. Corneal reflex was present. The boy could not answer when spoken to. He had no convulsion and his muscles were not rigid. There was a hypersecretion of saliva. He remained in this condition for about thirty minutes when he gradually regained consciousness. His convalescence was otherwise uneventful and he was dismissed from the hospital on Dec. 29, 1904.

The patient was re-examined on Nov. 17, 1905. At that time the defect in the skull was found to be firm, not yielding on pressure and showing no pulsation. The surface was slightly irregular. Before operation his parents say the boy was dull and unable to study. At the present time he goes to school and his family report that he is bright in his studies and is perfectly well.

CASE VII. F. L. Female. Aged, twenty years. Married.

When a year old patient fell on a rusty iron, striking left side of forehead, driving nail into her head. After this she says she had meningitis for about six months. From that time she was well until sixteen years of age, when she began to have convulsions. In the convulsions she falls to the ground, bites her tongue and has foaming of the mouth. Her first convulsion came with the first menstrual period. She entered the hospital Sept. 10, 1905, and was operated upon for abscess of the breast. During her sojourn in the hospital she had repeated epileptic attacks. Patient had a small scar over the left frontal bone and on palpation the external surface of the bone was found to be somewhat irregular. On Sept. 21 a button of bone, 2 cm. in diameter, was removed with a trephine. Its inner surface was found to be somewhat irregular. The bone at the point of injury was thinner than normal, and there was no pressure upon the dura mater. On examination of the dura there seemed to be a marked increase of connective tissue. Before opening the dura and also afterward there was an escape of a considerable amount of clear fluid. The brain tissue was not normal, but showed in increase of connective tissue. None of the brain tissue was removed. A bone flap the size of the opening was secured just above the trephined bone and used to cover the defect in the skull.

There was a respite in the epileptic attacks immediately following operation, but they recurred at the next menstrual period, and recurred several times

again before her dismissal from the hospital on Nov. 5, 1905. The wound in the skull healed by first intention. A cigarette drain was left in place for two days. At the time of leaving the hospital firm pressure seemed to show that the opening was firmly healed.

The seven cases just reported would seem to demonstrate beyond question that defects of the skull can be repaired by the method which has been suggested. In every case operated upon, the wound has healed by first intention and the defect has been repaired by what seemed to be bony structure. The defects are firm on strong pressure, showing no pulsation, and in one case in which a secondary incision was permitted the incision came upon what bore every appearance of being bone.

In order to study more fully the process of repair, a series of observations were undertaken upon dogs. These were carried on by my former assistant and present associate, Dr. Henry L. Sanford, to whom I am greatly indebted. The following is his account of his investigations.

In endeavoring to carry out bone grafting on the skulls of dogs, several obstacles were encountered. The same precautions for securing asepsis were taken that would be employed with human beings, but still it was found difficult to secure and maintain an aseptic field for operation, and

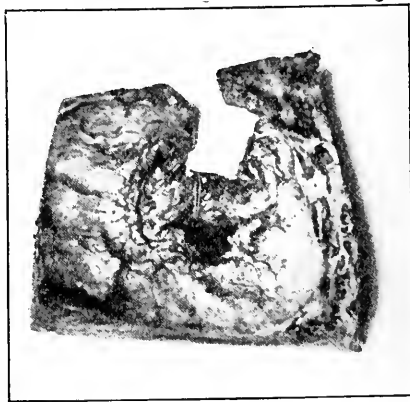


FIG. 5. Skull of dog. Internal surface showing bone graft two weeks after insertion. Rectangular defect made by removing bone for microscopic examination.

it was also hard to devise a dressing which the dogs could not succeed in pulling off. Crinoline bandages put on wet and extending down well on to the nose and back over the neck gave the best results. When dry the dressing hardened into a cast in which the dog seemed very comfortable.

The extremely irregular topography of a dog's skull also reduced the available operating area to the temporal fosse on each side of the median ridge. Here was found a fairly level space, large enough to yield a graft, and here, too, the formation of the dog's skull most nearly approxi-

mates the diploë of the human skull. Medium sized, short-haired dogs with broad skulls were found best adapted for the experiments.

The technique of the operation consisted in turning back from the median line the skin and temporal muscle in a horseshoe flap, taking care not to injure the periosteum. As large an area as the curving contour of the skull admitted was

one month, two months, three months, four months and five months after grafting.

I wish, especially, to thank Dr. McHenry for assistance in these operations. As in successive cases we alternated as operator and assistant, one half of what has been accomplished in these experiments is due to him.

SUMMARY.

March 17, 1905. Black cur dog. 30 pounds. Graft left side. Single flap. Killed at five months.

March 21, 1905. Brown setter dog. Thirty-five pounds. Graft left side. Single flap. Killed at four months.

March 31, 1905. Cocker dog. Forty pounds. Graft left side. Single flap. Killed at three months.

May 3, 1905. Bull dog. Thirty pounds. Graft left side. Single flap. Killed at two months.

Sept. 18, 1905. Bull dog. Twenty-five pounds. Graft left side. Single flap. Killed at one month.

Oct. 2, 1905. Black cur dog. Thirty pounds. Graft left side. Single flap. Killed at two weeks.

I herewith lay before you the skulls of the five dogs operated upon by Dr. Sanford. The specimens were prepared by Dr. Dolley. I am indebted to him for this work and also for the histological sections.

The following description of the sections is by Dr. Dolley.

MACROSCOPICAL APPEARANCE OF EXPERIMENTAL GRAFTS.

In the two weeks dog the graft is movable. This is less marked in the one month dog, and in the rest of the series the graft is firmly united to the peripheral bone. Partial calcification can be detected with a knife point in the two weeks and one month dogs. In the one month and two month dogs, the dura is adher-



FIG. 6. Skull of dog. External surface showing bone graft four months after insertion.

then marked out and chiseled off, so that the graft amounted to a sheet of periosteum, to the under side of which was adherent a layer of bone chips. It was at first attempted to transfer such a graft from one side of the skull to a previously prepared defect of corresponding size in the opposite temporal fossa, but the dogs stood the shock of what was practically a double operation poorly, owing to the enormous bleeding from a particularly large intra-osseous vessel which was met with in every case, and which was necessarily opened in getting off the graft in this only available location.

It was thought that the requirements of the experiment would be fulfilled if, after freeing the graft, the skull defect should be completed rapidly down to the dura in the place from which the graft had been taken and the graft then laid into practically its original position under the new conditions. This proved very successful.

Quite a number of dogs were lost through anesthesia, shock and sepsis, but after certain lessons had been learned a series of successful cases followed in which all the dogs lived and recovered promptly.

In order to judge the rate and character of bone repair in the grafts the dogs were killed at graded intervals after operation, and the series now represents the skulls at two weeks,



FIG. 7. Skull of dog. External surface showing bone graft one month after insertion.

and in several places about the edge of the peripheral bone. Apparently this only occurs within the normal interval between the graft and the peripheral bone. In the rest of the series the bone is non-adherent in the region of the graft.

MICROSCOPIC.

The tissue was fixed in Zenker's fluid and formalin, and stained with hematoxylin and eosin, and with Von Gieson stain.

TWO WEEKS DOG.

The interval between the peripheral bone and the graft, which is about 2 cm. in the piece taken for microscopic examination, is filled with connective tissue which has undergone a partial calcification. This connective tissue has its origin from the periosteum



FIG. 8. Edges of graft at two weeks. 1. Superior surface. 2. Inferior surface. 3. Edges of graft. 4. Small bit of graft. (Cam. Luc., Leitz, oc. iv, obj. 3, x 105 $\frac{1}{2}$, Zenker's fluid, hematoxylin and eosin.)

covering both the superior and inferior surfaces of the peripheral bone and from that covering the superior surface of the graft, from the diploë of the peripheral bone, which in this dog is fairly well marked, and to a slight degree also from the overlying fascia. It has a reticulated appearance with small empty interspaces, irregular in shape, and lined usually with a layer of osteoblasts. Some of the spaces are full of osteoblasts. The connective tissue is faintly fibrillated and very cellular. The cells consist of connective tissue cells proper with fusiform and small spindle nuclei and of osteoblasts. In part the fibrillated character of the connective tissue is lost, and it is homogeneous in appearance. This is more evident about the interspaces just mentioned, and indicates where calcification has occurred. In one block the edges of both the peripheral bone and the graft still remain partially uncovered by cellular periosteum, but in the second, the edge of the peripheral bone is almost entirely covered by osteoblasts, though that of the graft is not. Upon the surfaces, and particularly in the diploë of the peripheral bone, the osteoblasts are actively proliferating. The outermost lacunae of the graft are also filled with osteoblasts. A few osteoblasts lie on the surface of the peripheral bone, but only an occasional one appears on the graft.

ONE MONTH DOG.

In sections from this the most striking feature is the active growth at the edge of the peripheral bone. The new formed bone contains numerous lacunae, some of which open upon the surface. They are filled with osteoblasts. The free edge is covered with an actively proliferating cellular layer of periosteum. The edge of the graft shows the same appearance of growth but it is not so marked. Lying in the fibrous

periosteum on the superior surface of the graft proper are several isolated areas of true bone which possess lacunae and are covered with a layer of osteoblasts. These are probably fragments which were accidentally imbedded at the operation and which remained viable. Their structure is too dense and the bone corpuscles are too few and too contracted for the areas to be new formed bone. As in the two weeks dog, the interval between the graft and the bone, which macroscopically was almost solidly calcified, is composed of connective tissue. It differs from the earlier stage in that it is less cellular, and the interstices are larger and all empty. Judging from the paucity of osteoblasts, there is little absorption of the graft.

FIVE MONTHS DOG.

The graft and the peripheral bone have grown to within $\frac{1}{2}$ mm. of each other but both are still sharply defined. After decalcification, the interval between them is composed of connective tissue whose origin from the periosteum of the superior and inferior surfaces can still be traced, but which has almost entirely lost its fibrillary character between the two edges, being homogeneous, with a few contracted osteoblasts and spindle nuclei. No osteoblasts are seen. Periosteum covers the edge of both the graft and the residual bone, and in each for a short distance from the edge the appearance is that of newly formed bone, with numerous osteoblasts. The initial process of calcification is evidently being replaced from both directions by true bone.

CONCLUSIONS.

1. The initial process is the filling of the gap between the graft and the peripheral bone with connective tissue, which arises principally from

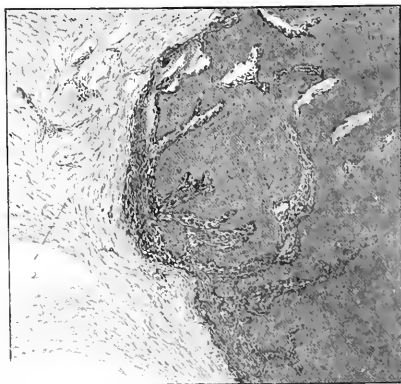


FIG. 9. Edge of peripheral bone at one month. Shows rapid growth of bone. 1. Connective tissue filling gap between edge of bone and edge of graft. 2. Dura mater. (Cam. Luc., Leitz, oc. iv, obj. 3 x 105 $\frac{1}{2}$, Zenker's fluid, hematoxylin and eosin.)

the periosteum of each, and which at two weeks has already undergone considerable calcification.

2. The graft remains viable and intact, and begins to grow both in thickness and at its edges.

3. Growth of the free edge of the peripheral bone is more marked than in the graft.

4. The growth of these gradually replaces the initial calcification, and at five months only a trace of the process remains. The probabilities are that after longer time there would be a true bony fusion.

The final conclusions reached by this paper are:

1. Defects of the human skull can be covered by bone.

2. The bone may be secured from a portion of skull adjoining the defect.



FIG. 10. Edges of graft and peripheral bone at five months.
1. Edge of bone. 2. Edge of graft. 3. Superior surface.
4. Inferior surface. 5. Calcified connective tissue. (Cam-
bium. Left). 6. (by 4, 5, 100 \times). Formation, hemat. xviii and
cervix.)

3. This bone graft represents essentially the outer table of the skull, with the periosteum covering it.

4. No pedicle need be preserved in order to insure the viability of the bone graft.

5. Experiments on dogs show the graft to be solid at three months.

6. Histological examination shows that the bone remains viable and grows into its new position.

The object of this paper is to show that defects of the skull should be repaired promptly in order to avoid the occurrence of epilepsy and allied conditions.

THE DEFENSIVE PROPERTIES OF THE ORGANISM.⁶

BY R. C. JACKSON, D.D., M.D., NEW BEDFORD, MASS.

It is an incontrovertible fact that the progress and science of medicine and the therapeutic applications for the relief of pathological conditions incident to disease, are the results of epoch like growths. Although we must candidly and freely admit, while there are many impor-

fections and false conclusions inevitable in a science so intricate and so broad, based as it is on so many theoretical premises, still if we are patient, earnest and honest seekers after truth, we cannot fail to gather here and there, valuable and helpful facts from these pure hypotheses.

As you know, the causative agents of disease were anticipated through hypothetical reasoning and deductions, long before their discovery. And since, through the valuable work of Devaine, Koch and others, the germ theory of disease has become an established fact.

No age, no epoch in the progressive evolution of medicine has been able to solve all the problems, or any considerable part of them; and hence the solution of one problem leads to the probability of others. No sooner, therefore, were the causative agents of certain diseases established, than that very important and perplexing problem, "In what way does the body protect itself from these invading foes, and what are the defensive elements concerned?" arose.

This theoretical explanation of the defensive properties of the organism or the theory of immunity is the subject we intend to discuss in this paper.

In order to explain the theories of immunity, it will probably be more interesting and clear to begin with the defensive properties of the organism against soluble toxins like those of diphtheria and tetanus. In this class of infectious diseases the microbes become localized, elaborate their poisons, which are carried to distant parts of the body. The question naturally arises, "What is the nature of these protective elements?"

The answer to, and the elucidation of, this question will shed considerable light on the defensive power of the organism in this class of infection. To answer this question satisfactorily, Ehrlich's side-chain theory of immunity must be brought into requisition. Ehrlich's attempt at standardization of diphtheria toxin gradually led him to this conception of immunity. He claims that the cells have side-chains or receptors which will combine with toxins. When a poison, tetanus, for example, enters the body and is not sufficiently powerful or concentrated to destroy the cells, these cells are stimulated to reproduction of the receptors corresponding to the particular toxin. According to Weigert's law of Havers compensation, the receptors are produced in excess, and are then thrust off into the blood stream, and are known as antitoxin. Now what happens when the toxic elements enter the blood? They come in contact with the circulating receptor or antitoxin and their affinity is satisfied.

H + T = N

H = N

By a series of experiments, Weigert has shown that there are three things necessary for the production of antitoxins or antibodies.

1. The combining of the bacteriogenic group of the toxin to the receptor.

⁶Read before the New Bedford Medical Society, Jan. 7, 1906.

Second, an increased production of the receptors following the binding.

Third, the thrusting off of these increased receptors into the blood stream.

Wassermann has recently demonstrated the existence of these three stages experimentally.

It is a well-known fact that if a powerful toxin is heated to 145° to 150° C., or is kept for a long time exposed to heat, light and oxygen, it loses its toxic power. But it still has the power of satisfying through its haptophorous group the corresponding receptor. This innocuous toxin is known as a toxoid, $H + (T) + X$.

Some tetanus toxin which Wassermann had kept since 1896, and which had lost its toxic property, was used in the following experiments:

He injected this tetanus toxoid into a guinea pig, and from one to two hours afterward some fresh tetanus toxin was injected. He found that the lethal dose would have to be increased, because a part of the receptors were occupied by the toxoid (according to Ehrlich's theory). When, however, he waited somewhat longer, one to three days before injecting the fresh toxin, less than the minimum lethal dose tetanized and killed the animal, for in this case Weigert's Law of Hypercompensation had come into play, producing an increased number of receptors, without any formation of antitoxin, that is, freely circulating receptors as no antitoxin was found in the blood after injecting the toxoid; therefore Wassermann claims that the toxoid brings about a (1) binding of the haptophorous group with the receptors of the cell, and (2) an increased production of these receptors which remain attached to the cell, or sessile, and hence the toxophorous group is needed to bring about the necessary stimulation for the thrusting off of the receptors into the blood stream or the formation of antitoxin. This is a very important observation as you can see, since so many investigators claim that antitoxin can be produced by the use of toxoids.

The nature of the neutralization of the toxins by the antitoxins has been and still is productive of a great deal of discussion, and a wide difference of opinion. Ehrlich maintains that the neutralization is the result of a chemical reaction, supporting his views on the following observations:

1. Antitoxin and toxin can be titrated like an acid and an alkali.

2. Their union is hastened by heat and delayed by cold.

3. That combination takes place more rapidly in a concentrated solution.

Equally capable observers, Buchner being the chief exponent, oppose the chemical nature of the reaction, and explain it on purely physiological grounds. He claims that there is no interaction between the toxin and antitoxin, but when both are present in the body of an animal, the antitoxin stimulates the cells to resist the toxin.

The limitations of this paper will not allow me to enter into this discussion, but the evidence based on experimental observations seems to

support Ehrlich's view. Permit me to call your attention to one experiment which seems to me conclusive proof of the chemical theory.

From the researches of Meyers and Ramson it has been shown that tetanus poison is not absorbed via the blood or lymph channel, but reaches the central nervous system via the nerves; but the tetanus antitoxin, unlike the toxin, is not a neuropathic substance but follows the blood and lymph channels. Adrenal, as you know, strongly contracts the capillaries and thus blocks a particular area. Wassermann using a neutral or innocuous mixture of tetanus toxin and antitoxin, if he injected the hind paw of a guinea pig no tetanus developed. But if he injected some adrenal in a similar sized guinea pig, and waited till the capillaries were contracted, and then injected his neutral mixture, tetanus developed. His explanation is as follows: The path of the antitoxin was blocked, while the neuropathic path for the toxin was open, and hence the toxin was torn loose from its combination with antitoxin and hence produced tetanus. Wassermann found, however, if he waited two or three hours before using the mixture, the combination was so firm that the substances could no longer be torn apart. He could hasten the firmness of this union by using an excess of antitoxin. As suggested by Wassermann, the possibility of increasing this affinity by means of large doses of antitoxin is a point of considerable practical value in serum-therapy.

In passing from toxic immunity to anti-microbial, or immunity against infectious agents, we find the problem more complex, and the evidence and explanations to justify conclusions based on hypothetical deductions greatly at variance. This phase of immunity, like the toxic, is largely dominated by Ehrlich's views. Pfeiffer's reaction gave the initial impulse to investigations which have played such an important rôle in anti-microbial immunity. If a guinea pig immunized against cholera virus be injected with a virulent culture of the same into the peritoneal cavity, a clumping, finally disintegration and dissolution take place. Bordet's work on hemolysis, together with a great number of experiments, have shed considerable light on Pfeiffer's phenomena, which is the basis of the modern theory of immunity.

Bordet injected a horse's with a rabbit's xanthocytes, and found that the horse's immunized serum produced lysis of the rabbit's red blood corpuscles. If, however, this serum be heated to 55° C. for one hour, the hemolytic power was destroyed. But hemolysis could be restored by adding some fresh normal serum. Therefore the presumption arose that there are two bodies concerned in hemolysis and bacteriolysis. Ehrlich has demonstrated, the body destroyed by heat is the complement, while to the more resistant body he has given the name of amboceptor, intermediary body, or immune body. Therefore, lysis, according to his theory takes place by the amboceptor combining through its haptophorous group with the bacterial

or other alien cells, after which the complement unites with the corresponding Haptophorous group of the amboceptor causing the disintegration and finally solution of the foreign cells

$$H + N + X = \text{Red blood corpuscles}$$

$$H + H + X = \text{Amboceptor}$$

$$H + (L) + X = \text{Complement}$$

The lytic element (L) dissolves the red blood corpuscles.

Formation of amboceptor

$$H + N + X = \text{Red blood corpuscles}$$

$$H + H + N + X = \text{Tissue cells} = H + H + X$$

$$H + L + X = \text{Complement}$$

Investigators differ widely with regard to specificity of the immunity agents in hemolysis and bacteriolysis. There is considerable unanimity of opinion as to the specific nature of the amboceptor, but even this Ritchie claims is not unquestionable, because, "on the broad view of the theory of immunity the conception of specificity of the amboceptor is questionable, especially when we consider that the immune bodies are derived from the receptors or mediators concerned in normal metabolism; therefore, the assumption that the affinities of these side chains may be satisfied by other cells than the red blood corpuscles and bacteria."

As to the specific nature of the complement opinions are extremely divergent. Ehrlich believes that each series of immune bodies has a corresponding complement, while Bordet maintains the non-specific nature of the complement. It would be interesting, if not profitable, to enter into this discussion, but the limitation of this paper will not permit.

Observations of Weech and Neisser seem to indicate the specific nature of the complement in bacteriolysis, for if below a certain number of immunity bodies, or a great increase over a certain number be used, no bacteriolysis. But any increase of immunity bodies over the normal number has no effect in hemolysis.

Also anti-complements seem to prove the specific nature of the complement.

Oppenheimer claims that the complement is non-specific with reference to its action on cells but is specific with reference to its affinity for amboceptors.

There is considerable dispute with regard to the nature of the reaction between the bacteria-immune bodies and complement. Ehrlich believes that the amboceptor has no improving effect on the invading cells, but are merely mediators, or go-betweens for the complement. Buchner and Metchnikoff however believe the amboceptor not only is bound to cell but induces it, and that the alexine or complement merely completes the process.

Another important phase of this question is the origin and source of formation of these defensive elements of the body. Metchnikoff and his followers maintain that the phagocytes are the

chief protective agents of the organism against infection. His general phagocystic theory is so well known that we need not enter here into its discussion. New facts based on experimental investigations have caused a considerable revision of his first theory. Recently he contended that the origin and source of these immunity agents are the protoplasm of the leucocytes which attracts, kills and then englobes the invading cells. As you can readily see, the virtue of this theory is based on chemotaxis, the pathogenic effect of which depends on the fact whether the bacteria attract, do not attract, or repel the phagocytes. On this theory, natural immunity can only be accounted for on the ground that "the phagocystic reaction is very pronounced and so effective that an infecting agent is invariably destroyed. In artificial immunity the immunizing process produced by the administration of small doses of bacteria, or bacteria in a state of diminished virulence, enables the phagocytes to become accustomed to them so that they can ultimately endure and dispose of a dose fatal in another animal of the same species." Therefore, according to the phagocystic theory, the destruction of the morbid agent, if recovery takes place, occurs within the cell.

Metchnikoff claims, however, that the immunity body may escape into the body fluids, and there sensitizes the invading cell, but its destruction takes place chiefly through the action of the cytase which remains in the cell. This view is hardly consistent with the finding of both the complement and amboceptor in the body fluids. But here again, contending for his intracellular destruction of bacteria, he regards the presence of the immunity agents in the fluids of the body, due to degeneration of the leucocytes, supporting his contention on the observation: When the peritoneal cavity is injured by injection of foreign substances, there is almost complete disappearance of the leucocytes, a process of phagolysis, which is soon followed by hyperleucocytosis, mainly macrocytes if the foreign cells are xanthocytes; microcytes if they are bacteria.

Pfeiffer, however, denies the freeing of the immunity agents through phagolysis, basing his opposition on the fact that exudates rich in leucocytes, his or Pfeiffer's reaction takes place more slowly than where it is poor in white blood corpuscles.

Bordet does not concur in Pfeiffer's observation, claiming that the Pfeiffer reaction does not occur where phagolysis does not take place, e.g., anterior chamber of the eye, subconjunctival tissue and passive clama.

The experiments of Gengou seem to me to throw some light on this contention. Blood was drawn from a guinea-pig presenting a certain degree of secondary tuberculosis, allowing coagulation in the central gel and the plasma exhibited little or no bactericidal power, while the serum had definite bactericidal power. If Gengou's experiments prove positive in a

large number of experiments in both normal and immunized animals, the inference would be that there is little or no bacteriocidal power in the circulating blood, thus making the white blood corpuscles the chief source of the protective or defensive elements. Still Wassermann's experiments seem contradictory to the above conclusion.

Guinea pig + typhoid + immunized serum = no typhoid.

Guinea pig + typhoid + immunized serum + anti-complement sufficient to neutralize the complement = death to the animal.

He concludes that the complement is not confined within the cell but naturally exists free in the guinea pig's blood.

Gentlemen, it would lead us too far into meshes and entanglements of the many theories proposed, to discuss them all, but the probability is in a problem so complex and perplexing, that there is a certain amount of justification in the contention of each. That in some infections; *c. g.*, pneumonia, septicemia, the leucocytes are the main defensive agents; remember, I say, the chief, because we cannot say that other cells are not brought into requisition. Hoekton in some recent investigation found that the serum of pneumonia patients has very slight if any bacteriocidal properties, but leucocytosis was very evident, and you know that leucocytosis is of considerable prognostic value in pneumonia. Still there are other factors probably concerned that future investigation will discover. Hoekton and Reudiger in some recent studies on the antilytic action of salt solutions and other substances, conclude that those antilytic salts like CaCl_2 , BaCl_2 , $\text{K}_4\text{Fe}(\text{CN})_6$, "prevent hemolysis and probably bacteriolysis by virtue of their action on the complement:

"1. Because in nonlytic serum salt mixtures corpuscles freely take up amoebocytes whose complementophile groups remain free.

"2. Because precipitation of the antisalts restores the lytic property of the complement.

"3. Because of the quantitative relationship between complement and antisalts."

These observations together with the additional discovery that disintegrated typhoid bacilli have anti-bacteriolytic properties, open the way for an explanation of many clinical and experimental facts not in harmony with the accepted theories of immunity.

It has always been difficult to reconcile relapses and reinfection to the prevailing theories of immunity, but these experiments of Hoekton and Reudiger on salt solutions and disintegrated typhoid bacilli indicate that it is possible for the disintegrated bacteria or other substances to occupy the complement and by the introduction of fresh germs, reinfection or relapse may occur.

Another important observation is that a normal salt solution enhances the value of the lytic properties of an immune serum. This is of great practical value in view of the fact that a normal salt solution is so freely used in septic cases and abdominal operations.

I cannot better serve you in closing this paper than in the final words of Ritchie: "The consideration of the theories advanced at the present day to account for the phenomena of immunity thus leads on to results which have a deep biological significance. If looked at from the clinical standpoint alone, they form a contribution to our understanding of the complex processes by which living matter manifests itself as active. Not only so, but they lead to the possibility of understanding functions of cells, the laws which govern their activity, and the way in which groups of cells in the complicated household of the animal body contribute to each other. Thus not only the pathologist but the biologist and physiologist are concerned in the solution of the problems which are opened up."

Like Moses, we have a mere glimpse into the Promised Land of medical problems whose complexity has baffled the most acute scientific minds in all ages. As the explanations and understanding of the fundamental factors underlying the absolute defensive properties of the body become more evident, this glimpse of the "Promised Land" will change into an occupation. Then, and not till then, will many of the biological questions incident to the pathology of the individual be solved—the solution of which will generate a newer and better therapeutical armamentarium of the physician. The light is dawning, and in order to reach the highest coefficient of medical service, there must be a hearty co-operation of the laboratory worker and the clinician.

Clinical Department.

A CASE OF LANDRY'S PARALYSIS.*

BY W. D. ALSEVER, M.D., SYRACUSE, N. Y.

Mr. M., forty-eight years of age, a resident of Syracuse and a native of New York state was by occupation a metal polisher, but he had been out of work for several months, because of a strike, until ten days before he called on me. He was then working at his trade and was handling only one metal, namely, iron. He confessed to being a light drinker and he surely did not exaggerate. He used tobacco freely and also tea and coffee. At twenty years he had a soft chancre caused by an abscess of the left groin. A careful physical examination and cross-questioning about his subsequent history did not lead me to doubt the accuracy of this diagnosis or to think that he had suffered from other venereal disease. At twenty-eight years he was in bed nineteen weeks with inflammatory rheumatism but he entirely recovered and had no recurrence of the trouble. He habitually rose once or twice at night to urinate but micturition was rarely painful. One brother died of alcoholism and rheumatism, one sister of heart disease at thirty-five years, and another sister died in infancy. His wife was well and vigorous excepting for a rarefying osteitis of the bones of the right ankle which was first noticed after the disappearance of swelling of the legs which accompanied pregnancy during the previous year. There were several healthy children.

This man first consulted me on Saturday afternoon

*Read before the Syracuse Academy of Medicine, Feb. 6, 1906.

in September. He said that he felt perfectly well until the preceding Wednesday evening when he was unusually tired. Thursday night he was very weak and noticed some tingling of the fingers. On Friday he was still weaker and at 2 P.M. he quit work because his feet were heavy, his fingers tingled and he felt generally weak. On Saturday he went back to work but in the afternoon his knees became so weak that he fell down, soon after which he started for home stopping in my office on the way. He used a cane and his gait was that of a feeble man, it was neither talietic nor spastic in character. Beside weakness and tingling he complained of rather severe aching pain between the shoulder blades and beneath the sternum and of slight right-sided earache. There was some wax in the ear and a little tenderness behind it. These ear symptoms he remembered to have had before. Temperature and respiration were normal; pulse was 100, regular and not tense; the radial arteries were not perceptibly sclerosed. The pupils were equal and reacted to light and accommodation. There was no paralysis of motion or sensation, but motion was much enfeebled and sensation was a little delayed in the extremities, particularly the lower. Subcutaneous glands were to be palpated in the groins but not elsewhere. The organs of the chest and abdomen were examined but no abnormality was detected. No tenderness was detected in the body or extremities. Knee reflexes were absent and plantar reflexes present. There was neither toe nor wrist drop.

On the following day, Sunday, I saw him at his house and found him practically unchanged excepting that the ear symptoms had disappeared. On Monday he was weaker and there was slight tenderness in the middle of the back of the left arm; but nowhere else in his body, either over nerve trunks or muscles, could tenderness be elicited. On Tuesday I found him unable to walk and he even had some difficulty in handling himself in bed, not being able to pull up his knees without using his hands. The tenderness noted on the previous day had disappeared. The pain between the scapulae continued unabated, but the numbness and tingling, which were never very annoying, had diminished somewhat being still most marked in the feet and hands. Pulse was 80 and temperature and respiration were normal. The urine examination showed sp. g. 1020, acid reaction, amber color, no albumin and no sugar. On Wednesday I found that the pain in the back had been so severe as to prevent sleep; appetite was much impaired and any voluntary motion of the legs was impossible. Cutaneous sensation was still accurate but a little delayed. There was a little tenderness in the calves and over the spine between the scapulae. Koeng's test, performed by setting the patient up in bed, was negative but produced pain behind the knees. Respiration was easy and was not affected by position. Pulse was 100 and temperature was 97.2. The heart was still normal in size and action but there was a soft systolic blow just below and outside the nipple and a harder diastolic blow just above the nipple. The lungs and abdominal organs were unchanged. On Thursday the pulse had risen to 120. There was no power in the legs and very little in the arms and the other muscles were so weak that the patient found difficulty in hawking. The heart murmurs were fainter. The pupils reacted sluggishly. Sensation was the same but the feet and hands were objectively rather cold. On Friday the legs, arms and abdomen were completely paralyzed as were some of the thoracic muscles. Towards evening the diaphragm ceased to contract and the head was motionless. Throughout the day the voice failed so that by evening whispering was an exertion. Respiration was not rapid nor was there

struggling or gasping for breath, but the respirations became gradually shallower and shallower until each inspiration was marked by only the faintest movement of the clavicular regions. Sensation was apparently normal and the mind was perfectly clear and calm as it had been from the beginning. The two heart murmurs were heard with increased intensity but otherwise the chest and abdomen were as heretofore. On this day there was no pain. Death came at midnight, nine days after the appearance of the first recognized symptom. Throughout the sickness there was perfect control of the bladder and rectum. The drugs given, which were the iodide of potassium and ergot, seemed to produce no effect whatsoever. Unfortunately an autopsy could not be obtained. Several doctors saw the case and all concurred in the diagnosis of Landry's paralysis.

The diagnosis was arrived at by exclusion. It was first of all evident that the trouble was in the lower segment of the nervous system for had the lesion been in the upper segment the paralysis must have been spastic. If the lesion were of the cells of the cord, it must have been diffuse or confined to the anterior and posterior columns. Any transverse or local myelitis could not explain the symmetrical involvement of the whole body. Diffuse myelitis was excluded by the insignificance of the sensory disturbances and the absence of rectal and bladder symptoms. These same reasons were sufficient to exclude degeneration of the posterior columns. Acute anterior poliomyelitis rarely appears in adults and still more rarely involves both sides completely and symmetrically. So many of the symptoms of multiple peripheral neuritis were lacking that if this case were to be classed under that head it must be ranked as very atypical. The insignificance of the sensory symptoms, the absence of any period in which the muscles were spastic or the deep reflexes exaggerated, the absence of wrist and toe drop and the absence of the abnormal mental state seen usually with neuritis of alcoholic origin spoke strongly against a diagnosis of neuritis. The absence of fever suggested a degenerative rather than an acute inflammatory process.

Most diseases of this class are supposed to be due to toxemias. The only poisons which were under suspicion in this case were, first, those of syphilis, because of the confession of venereal disease and the existence of an obscure bone lesion in the wife, second, alcohol, because of the history and the appearance of the patient, and third, some metal other than iron which in a pure state or in an alloy the patient might unknowingly have handled.

The pathology of Landry's paralysis is so obscure as to impeach its right to exist as a clinical entity, yet those who saw this case were unable to establish a diagnosis which would have a firmer pathological basis.

THE FINSEN MEMORIAL. The committee in charge of the subscription for the Finsen memorial report that \$5,000 (nearly \$22,000) has been received. *Jour. Am. Med. Association.*

Reports of Societies.

BOSTON MEDICAL LIBRARY MEETING.

IN CONJUNCTION WITH THE SUFFOLK DISTRICT BRANCH
OF THE MASSACHUSETTS MEDICAL SOCIETY.

SURGICAL SECTION.

J. C. HUBBARD, M.D., SECRETARY.

DR. DUDLEY P. ALLEN, Cleveland, read a paper on
TRAUMATIC DEFECTS OF THE SKULL. THEIR RELATION
TO EPILEPSY. A CLINICAL AND EXPERIMENTAL
STUDY OF THEIR REPAIR.³²

DISCUSSION.

DR. W. N. BULLARD: In considering the question of operative treatment in traumatic epilepsy it is best to make a division of the subject and to distinguish between prophylactic operations or operations performed after injury with a view to the prevention of epilepsy in the future, and operations performed after the event of epileptic attacks with a view to the relief or cure of epilepsy.

In regard to the first class, that is, the prophylactic operations, while our views are decided, we have had few reliable statistics on which they may be solidly based. It is my purpose this evening to show what grounds we have for our beliefs and what real scientific basis there is. The view commonly held, and as I believe the true one, is that trephining should be performed, roughly speaking, in all cases of compound fracture of the cranium. Operation is advisable in my opinion in practically all cases of fracture of the vertex or sides of the cranium in adults. One reason among others for this, is the prevention of epilepsy in the future by the removal of any source of irritation which may exist. Epilepsy is so serious and so terrible an affection when fully developed and we are still so uncertain as to the exact traumatic causes which produce or tend to produce it, that any procedure which renders the patient less liable to it and which is not seriously dangerous is advisable.

But, on the other hand, we do not wish to exaggerate the danger. We must look at the subject with all the light we have. What do our statistics show? How often does epilepsy follow fracture of the skull? How much more often does it occur after non-operated than after operated cases? We know practically nothing definite on this subject. In 1897, I published the results of investigations as to later symptoms in the case of patients with fractures of the skull. Out of 70 cases there was only one who had had convulsions. This was a man seen forty-seven (47) years after a fracture of the right frontal bone, which had occurred when he was eight years old. He had convulsions daily for a time, but had had only one during the last twelve years. He came to the hospital on account of a posterior sclerosis of the spinal cord not connected with his injury.

As far as these figures go, epilepsy is not a very frequent sequel of fractures of the skull, but from our general clinical experience, we are convinced that it occurs often enough to make it a serious danger.

Thus far I have no personal statistics on the comparative freedom from epilepsy in the operated and nonoperated cases.

The frequency with which epilepsy so follows injuries of the brain that we may consider them as a cause, or, in other words, the frequency of true traumatic epilepsy is not as great as is often supposed.

Out of the 845 cases of epilepsy at the Massachusetts

Hospital for Epileptics at Palmer, only 61 or 7.2% have injury to the head given as a probable cause.

"Examination of the records shows that of these 61 cases there are 22 cases (14 men and 8 women) whose epilepsy was probably not caused by trauma. This leaves 39 cases (23 men and 16 women) or 4.6% in which trauma may have been the cause. Of these 39 cases there are 19 cases (9 men and 10 women) in which the histories are deficient and it is impossible to say that trauma was the true cause. This leaves 20 or 2.4% of all the cases admitted to the hospital in which there is little doubt of the traumatic origin of the disease. Of the 20 cases probably caused by trauma, 14 were men and 6 women. The percentage of probable cases of traumatic epilepsy among the men is 2.9% and among the women 1.6%."

These figures must be accepted as fairly correct. We have on the one hand the well-known tendency of patients and their families to attribute any affection to a preceding accident or injury. On the other hand we have a certain number of cases in which no satisfactory history is obtainable and some of these may have been due to trauma.

In regard to operations for the relief of traumatic epilepsy there has been much discussion and much writing of recent years. Very few surgeons have had a large personal experience in this matter, and data collected from the literature are not reliable. The examination of the records of the Massachusetts General Hospital made last year showed only 21 cases of operation for epilepsy, most of them "post-traumatic." Out of these 9 received benefit and 12 received no benefit. (Report of Dr. J. J. Putnam.) In the Boston City Hospital there were 18 cases of trephining for epilepsy of which 12 were traumatic. Of these 8 were relieved, in 1 the result was doubtful and 3 were not relieved. I made full reports of these cases before this society last year.

In 1903, Dr. John C. Munroe reported the results of 11 cases of trephining for epilepsy before the National Association for the Study of Epilepsy and the Care and Treatment of Epileptics at a meeting in Philadelphia. He considered the outlook far from encouraging. Out of these cases 4 were distinctly improved; in 1 the influence of the operation was doubtful; in 2 there was no relief; in 1 temporary relief, but return of convulsions later; 2 cases were reported too early to ascertain results; 1 case was probably not epilepsy. These cases included 2 of Dr. Lund's and 5 were done at the City Hospital and are included in their statistics.

In regard to the time when the operation should take place, I think we would all agree that the operation should take place as soon after the injury as possible. After a number of attacks the chance of relief is less. Nevertheless, of the cases which were reported here last year, one which was relieved was apparently due to an injury received eighteen years previous.

DR. G. L. WALTON: I have been much interested in the paper and in the discussion. Both tend to emphasize the desirability of free and early operation in fracture of the skull without stopping to analyze too closely the conditions under the fracture. In point of fact we cannot accurately determine the underlying condition, but we do know that autopsies show that an injury of sufficient violence to fracture the skull is likely to cause more extended fracture and more widespread injury beneath than can be determined by external examination. Dr. Sachs in a recent paper voiced the neurological sentiment in stating that it was no longer advisable to follow fixed rules for operation, but the question must be in each case answered,

* See page 396.

"Is there probable injury to the brain, localized, accessible, and likely to do better under operation than if left alone?" If we are in doubt upon this point but are sure there is fracture, the benefit of the doubt should be given to operation.

Dr. Allen's very ingenious and very successful device for closing the skull is certainly worthy of trial in those cases in which it seems desirable to close the defect, though in my experience the cases are comparatively few in which this seems a sufficiently important indication to call for the additional operation.

Dr. E. L. SOUTHWICK: It is encouraging to find a few men approaching the field of epilepsy by experimental paths. The experimental outlook for the solution of the problems of genuine epilepsy has been until late years very dark. One point has been gained, however, by microscopic methods: no neuropathologist departs contented from the microscopic examination of the brain of an epileptic without discovering lesions. These injuries, which are notably exhibited in the outer layer of the cerebral cortex and often maximally in the Ammon's horn, affect the neuroglia as well as the nerve cells and are of such a nature that we are left in doubt whether they are causes or effects of the epileptic discharges. The fibrillary gliosis which characterizes the injured lesions has much in common with scar tissue found elsewhere in the body and has therefore seemed of trifling consequence in the big problem of epilepsy.

The trifling value of these findings by pathologists in the brains of epileptics has been due to our inability to follow the natural history of such injuries in the lower animals. The histopathology of the neuroglia in the lower animals has failed to advance in the past through the lack of good technical methods. The first technical step in advance was Weigert's neuroglia fibril stain of 1895. This stain, although well calculated to differentiate neuroglia from nerve tissue, was not so well adapted to the differentiation of neuroglia from the connective tissues of mesodermic origin. The latter differentiation is particularly desirable in the interpretation of traumatic lesions in lower animals. The histological complications in this kind of injury are well studied by the recent methods of Mallory.¹

What can be hoped from the use of modern histopathological methods? A few fragments only of these processes can be obtained by the examination of human tissue alone. In animals all the steps of the process of gliosis can eventually be followed. Not in the lower vertebrates, however, since their neuroglia supply is not great enough. The work by the Harvard Pathological Department has shown that the monkey possesses appropriate neuroglia tissue. In several varieties of monkey the neuroglia supply approaches that of man. We are approaching histopathology of the neuroglia which shall not be purely speculative. It is evident that a few non-speculative elements are desirable in the field of epilepsy.

Dr. J. COLLIER WEAVER: In undertaking to say something there coming on the subject of the paper by Dr. Allen, I was of opinion that my object was to investigate a part of the Massachusetts General Hospital, and I thought that the subject of the case was rather an interesting one, rather than a very common one.

We all had heard when we were young that the case that we were going to have something akin to the great success which we had been having in previous decades in working out cases of the abdominal cavity. It

¹E. B. Mallory, A Contribution to the Histopathology of the Central Nervous System, The C. V. Mosby Co., St. Louis, 1908.

²E. F. Southwick, A Case of Epilepsy in the Monkey. B. C. H. Med. Surg. Papers, 1905.

does not seem that that hope has been borne out by subsequent experience. But in watching the success of various other surgeons in operating for traumatic epilepsy I have experienced a certain degree of relief. It does not seem to me that mine appear so very bad as they did before I heard what Dr. Allen had to say upon the subject. I collected about eleven cards of cases of operations for epilepsy, but of these several were not of a traumatic character, and in one or two cases it was not possible to get the end results, and consequently have only about 6 cases in which results can be given you.

The first of these was a case that had come into the Massachusetts General Hospital in 1863, operated upon by one of the generation of surgeons previous to our own. The patient had experienced very little relief from what had been done for him at that time, and he had all the horrible conditions which follow epilepsy from pressure of the bone and formation of adhesions and cystic formation, etc., with brain degeneration. He had repeated fits and life was practically unendurable for him, and I operated upon him with perhaps the best result that could be wished for. The result was fatal. The operation was one of extensive trephining. There was severe hemorrhage from the bone with difficulty controlled by a wax plug which led to supuration.

Another case is that of a boy twelve years of age. He had a severe injury at the age of one, followed within a year by epilepsy. He was operated upon in 1890. Trephine was placed over left motor area where there was a marked depression with escape of much clear serum. The bone was removed and a cyst as large as an English walnut was found and removed. There were spurs of bone on inner side of button with dura adherent above and below. Ten years later heard of patient's death during a convulsion.

The next case has unfortunately a very short history. A man, forty-eight years of age, twenty-seven years ago had a very extensive portion of the skull shot away by an accidental shot wound sustained by himself. Facial paralysis and loss of speech followed at the time, but motion and speech subsequently returned. Epilepsy appeared for the first time four months ago. There was a scar five inches long and under the depressed bone there was a cyst and a great many adhesions. June 10, about six months after the operation, there had been no return of the attacks of epilepsy, but no subsequent history could be obtained. It seemed he had obtained considerable relief from the operation.

Another case was in a man thirty-four years of age. Blow on left side of head when a small boy. Two years later attacks in right hand sometimes associated with difficulty of speech; attacks daily, sometimes with loss of consciousness. Large trephine opening over fissure of Rolando. In 1894 had a large trephine, adhesions of dura to pia. Two years later attacks appeared as before operation, rather more excessive, but he has never had since the operation any loss of consciousness.

The next case was that of a young man, thirty-two years of age. He had been kicked by a horse and had a fracture over the right occipital protuberance. There was some tearing of the bone at the point that practically no definite scar of the injury. He had some slight motor deficits. The bone was trephined and a portion removed and he had been free from any further attacks.

Another case, that of a girl, twelve years of age, who had had epilepsy for four years before the operation. She had been operated upon during which she had epilepsy

sociated with other conditions. On June 3, 1891, a large trephine was placed over hand center. Dura found adherent and separated from pia by dark, soft, organized clot, very extensive; small piece of dura with a bit of the cortex removed. After operation left hand paralyzed, also to less degree left leg and face. The attacks returned but there was gradual improvement. The attacks were much less frequent. In 1905, he is reported to me by Dr. Putnam, whose case it was, as well, and must be regarded, therefore, as a cure.

Of these six cases there are two cures, — one a severe and one a slight case.

In regard to the method of operation in the early cases, I used the very large trephine, but in later years I have been in the habit of using the osteoplastic resection of the bone and replacing the flap over the operation.

In one case, which was not one of those that I have just reported, I had an experience which will be interesting perhaps to Dr. Allen. That was in a patient about ten years of age who was trephined over the right shoulder center and a large button was taken out and carefully kept in a warm solution of carbolic during the operation. There were also a large number of small masses of bone which had been bitten away in the attempt to enlarge the opening made by the trephine. The bone was replaced and the various fragments were dove-tailed together with great care about it. The wound healed by first intention, and I saw the patient several years after the operation, and there had been apparently a complete closing in of the bone. I do not feel sure that replacing the bone is so very important an indication in the operation. I remember the case of a member of my family who at the age of ten fell over a fence, sustaining a compound fracture of the skull. Fragments of bone were removed by the surgeon at the time, I should say covering a space as large as a silver dollar and a silver half dollar side by side. The boy grew up to be an old man, and there was a large, soft "fontanelle" on the side of his head, but he never experienced the slightest inconvenience from the injury.

DR. F. B. LUND: I wish to show a patient nine years old, who five years ago had had a fall causing a short period of unconsciousness, and a depressed fracture of the skull. The depression, contrary to the usual practice, was not elevated. One reason for showing the case was to emphasize the point that it was desirable to elevate all depressed fractures of the skull in order to prevent the appearance of epilepsy later. This little boy was seen by Dr. Lund last March, five years after the injury. Six months before he saw him he had had a convulsion; two months later another; then the convulsions became more frequent until in March he was having them every two weeks. He was seen at the Out-Patient Department, referred to Dr. Monks, who on was on duty at the time, and who operated. The operative findings were interesting. A flat piece of bone projected inward from the posterior edge of the depression, which was about an inch in length, a distance of about three eighths of an inch. The edges of this piece of bone were smooth and scalloped, not rough as would be the edges of a fresh fracture. Surrounding and covering this bony spur was a sac containing serum which lay between it and the brain, making a distinct cushion so that the bone did not project in any sense into the brain, but the sac of fluid or cyst which surrounded it made a distinct depression in the brain surface. The pressure of this fluid against the bone had probably smoothed and rounded it. The cyst walls were removed, the bone which projected inward was removed, and the edges of the opening in the skull thoroughly smoothed. The

boy early in his convalescence had two convulsions, but has since remained entirely well and had no recurrence. Nine months have elapsed since the operation.

In regard to the statistics for operation for epilepsy, Dr. Lund said that he found the histories very difficult to follow, and the ultimate results impossible to ascertain from the hospital records. A great many of the patients who were discharged relieved had convulsions afterward. The most favorable results in operations for epilepsy which he had seen in his personal experience had been the cases where cysts were found pressing upon the brain, sometimes in conjunction with bony depressions, sometimes not. In cases where scars or adhesions are found the result is apt to be poor because when scars or adhesions are excised with perhaps temporary relief of symptoms, as time goes on they are replaced by other scars and other adhesions. In cases where cysts are found, however, if the cyst is drained, and sufficient of the bony wall of the skull removed to prevent the fluid re-accumulating, excellent results may be obtained. It has seemed to him that instead of attempting to replace the bone in these cases the essential point is to remove so much of the bone that the cyst cannot reform. A case which Dr. Munro had reported in his most interesting paper on trephining for epilepsy² was a case in point. This boy had had a fall causing unconsciousness in childhood. Five years ago he began to have epileptic attacks. At the time he was operated on, Nov. 14, 1902, he was having attacks every day, or two a day. He had an attack on the way to the railroad station going to Boston, and when the doctor went to the station to meet him he found him in the police station; he had been arrested for having an attack on the street. There was a scar on the left side of the forehead, no depression of the bone. The bone was found thinned by the pressure of the cyst, filled with partly coagulated serum causing a distinct depression in the brain. The cyst was drained, and the attacks completely relieved for three or four weeks. Then they recurred, and his physician, Dr. Morrissey of Unionville, Conn., removed the bone clear to the edges of the cyst so that it was impossible for it to re-accumulate. Relief for a considerable period followed this interference, and the boy has made marked improvements, and improvement has continued ever since the operation. In studying the cases which Dr. Bullard made the basis of his statistics, it seemed to the writer that the only ones in which real relief had been obtained and which could be ascribed to the operation were the ones in which the cyst either on the surface or directly beneath the cortex of the brain had been found.

Epilepsy is a disease which is so discouraging to all methods of treatment that in every case it seems to the writer where there is a distinct history of injury, especially in childhood, or an old scar, an exploratory operation should be performed. If we are fortunate enough to find a condition which can be relieved we have done the only thing that offers our patient any hope, and if not, we have done no harm. Whether it is worth while, not finding cysts, to excise scars or adhesions in the brain is a legitimate matter for argument. Depressed bone should, of course, always be elevated.

HOSPITAL FOR THE TREATMENT OF ACUTE ALCOHOLISM. — According to the *Medical Record*, an ordinance in the Chicago City Council has been introduced by Alderman Scully, providing for the construction and maintenance of a hospital for the treatment of acute alcoholism.

² BOSTON MED. AND SURG. JOUR. FEB. 4, 1904.

AMERICAN DERMATOLOGICAL ASSOCIATION.

TWENTY-NINTH ANNUAL MEETING, HELD AT THE ACADEMY OF MEDICINE, NEW YORK CITY, DEC. 28, 29 AND 30, 1905.

(Continued from No. 14, p. 379.)

THE EVOLUTION OF A CASE OF MYCOSIS FUNGOIDES UNDER THE INFLUENCE OF ROENTGEN RAYS.

DR. CHARLES J. WHITE and DR. FREDERICK S. BURNS, of Boston, Mass.: This paper gave the clinical details of a case of mycosis fungoides in a man fifty-two years old, a farmer by occupation, and a native of the United States. The patient had always enjoyed the best of health until the onset of his present illness, in March, 1902. He was admitted to the Skin Ward of the Massachusetts General Hospital on June 26, 1905, and three days later, x-ray treatment was begun. The treatment was repeated at intervals of two or three days, until Aug. 21, 23 exposures being given in the course of fifty-four days. The total time of the exposures was eight hours and twenty minutes. Under this treatment, in addition to local and internal remedies, the skin lesions rapidly disappeared, but coincident with their disappearance the patient suddenly developed severe toxic symptoms. He gradually lost flesh and strength, and died on Sept. 7, 1905, apparently of toxemia. The autopsy showed a fibrino-purulent bronchitis and pleuritis; hyperplasia of the spleen and dilatation of the heart, with evidences of streptococcus septicaemia, which was attributed to the presence of bed sores in the final stage.

In connection with the report of this case, Dr. White reviewed the literature upon the subject of the toxic effects produced by the x-rays, due to the occasional rapid disappearance of various tumors under the influence of the rays, and the absorption by the system of the broken-down tissue products.

DR. J. NEVINS HYDE reported a case of mycosis fungoides in which no lesions had recurred in the regions treated by radiotherapy, and in which the patient was still in very excellent condition at the present time, after the disease had lasted eight years. He thought the prognosis depended largely upon whether the treatment was begun in the fungoid or pre-fungoid stage of the disease.

DR. S. PORTITZER thought the death of Dr. White's patient might possibly have been due to septicaemia, resulting from streptococcus infection.

DR. WILLIAM A. PRUSE said that while he was willing to admit that toxic symptoms might result from the rapid dissipation of a tumor under the influence of the x-rays, his personal experience seemed to indicate that their occurrence was of extreme rarity.

THE ERYTHRODIPYRIA.

DR. J. NEVINS HYDE, of Chicago, Ill., said his paper was an additional contribution presented by the author and his colleague, Dr. Ernest F. McEwen, at the preceding meeting of the Association, entitled, "On the Relation of Certain Dermatoses to Each Other and to Changes in Vascular Equilibrium." The title selected did not refer to any brittleness of the nail tissue, but was chosen because of the exact presentation in the nail-plates of the purplish-white hue visible on the inner face of the shell of a cherry egg. Four cases were reported as illustrative of this modification of the nutrition of the nails. The following features were common to all. The patients were all young women, below the standard of sound health. In none was there any distinct affection of the circulatory system. All exhibited marked interference with the stability of the vascular equilibrium, and all suffered from hyperidrosis of the hands and feet. In some of the cases there were distinct changes in the hue not of the nails only, but also of the skin of the hands and feet, the bluish and purplish shades being recognizable in the integument of those organs at some distance from the nails, and also in the nail-beds. The nails were thin, but never coarse in structure. There was a distinct tendency in all to curving of the nail plate away from the axis of the bed. The changes in the nail were thought without question to be intimately associated with the hyperidrosis.

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A CASE OF PSYRIASIS RUBRA OF HEBRA'S TYPE.

DR. F. H. MONTGOMERY and DR. PETER BASSETT, of Chicago, Ill.: The patient was a man, forty-six years old, a farmer, whose family history was unimportant with the exception of the fact that one sister had died of tuberculosis. The patient had typhoid fever seven years ago, and for twenty-seven years had suffered more or less from asthma. For fifteen years with the exception of six years during which he had abstained wholly, he had used alcoholic stimulants periodically to excess, indulging in sprees of three or four days' duration on an average of once in ten days or two weeks. His skin disease began in February, 1901, as a large blister on the plantar surface of the right foot. This spread to almost the entire sole of the foot, and in a few days an erythematous and slightly vesicular eruption appeared on the left foot, then on the buttock, and ultimately almost the entire surface of the body was covered with a red and slightly scaling rash. For the first few weeks this gave rise to severe itching and burning. Soon after the exanthem became generalized, exfoliation was pronounced, and for the past sixteen months the skin had remained simply red and scaly, showing no other type of lesion. Two months after the eruption became generalized, the pubic hairs fell out. Those of the eyebrows were also lost, but returned. The plantar and palmar surfaces showed a markedly thickened skin. The patient died on Aug. 22, 1905. This case, in common with others, in its clinical history and in the autopsy findings, suggested that a primary infection of the skin was the cause of, first, the cutaneous disorder; and, second, the general marasmus. It had to be admitted, however, that the etiology and pathology of psoriasis rubra were as yet unsolved problems. The relation of the disorder to tuberculosis, suggested by Jadassohn, was not at all clear. It was highly improbable that this cutaneous affection was a rare manifestation of so common a disorder as tuberculosis, but it was quite conceivable that the marasmus accompanying the skin disease might render the patient more liable to tubercular infection. The necropsy findings did not throw much light on the nature of the skin affection, and also left doubt as to the cause of death. The conditions found suggested a terminal infection, either uræmic or toxic, secondary to the skin disease.

DR. E. A. DEMME, of Philadelphia, said there was no doubt that under the name psoriasis rubra a number of different clinical types of case were grouped. His own experience had been that a psoriasis rubra was extremely rare in this country. He could not recall a single case of the Hebra type, with all its classical symptoms, at a fatal termination.

DR. JAMES C. WORTH, and he considered a psoriasis rubra, as described by Hebra, a very rare disease. Furthermore, that case of a cutaneous dermatosis, which resembled in many features Hebra's psoriasis, were not of so very infrequent occurrence, and he

was sure that Hebra did not recognize them as distinct; he called them all pityriasis rubra, and gave the type to the extreme cases which lived long enough to undergo atrophy.

EXHIBITION OF LANTERN SLIDES.

DR. JOHN A. FORDYCE and DR. GEORGE H. FOX gave a lantern slide exhibition of various lesions of the skin, both gross and microscopic.

BULLOUS AFFECTIONS AND THEIR CLASSIFICATION.

DR. EDWARD B. BRONSON, of New York City, in presenting this paper, said the term bullous diseases should be taken in a very restricted sense, inasmuch as a bullous eruption was nearly always the concomitant of some other disease. Of bullous affections there were two fundamental divisions: (a) Obstructive forms, in which bulle occurred as the result of obstruction in the sweat follicles or in the lymph channels, with mechanical distention at the point of escape in epidermis. (b) Acantholytic forms, in which a vital impairment of the cohesion between the prickle cells enabled a relatively slight effusion of serum to force its way between the cells and produce a lacuna. Acantholysis might be a consequence: 1. Of external injury. 2. Of absorption into the epidermis of venomous or infectious matter. 3. Of some other cutaneous affection, which might be either symptomatic or idiopathic, and of which the bullous lesions were only an incident. 4. Finally, of some internal disease, transmitting an injurious influence directly to the prickle cell layer of the skin, in which case the bullous eruption might be a pathognomonic sign either of a localized skin lesion or of some more general disease referred to the skin through the nervous system, but even in such cases the immediate cause of the bullous effect was very often some more or less slight and commonly overlooked local external injury.

THE CLASSIFICATION OF BULLOUS DISEASES.

DR. J. T. BOWEN, of Boston, Mass., said it was generally conceded in the dermatological world to-day that the word pemphigus could no longer be accepted in its old sense as representing almost all bullous eruptions not due to traumatism, or which represented a stage in the evolution of some well-known dermatosis. It was equally certain that while an advance had been made in eliminating many forms from this class, no unanimity had been reached, and the subject was very far from being scientifically settled. The group that had been so ably described by Duhring as dermatitis herpetiformis had come to be regarded by almost all as entitled to its own place, although there were differences of opinion as to just what should be included in that group.

Dr. Bowen said he would propose dividing the bullous dermatoses into the following provisional groups: 1. Acute infectious bullous dermatitis. This was the form that had been described as acute infectious pemphigus. 2. Chronic hereditary bullous dermatitis. 3. The form of bullous dermatitis which was described first by Neumann under the title of pemphigus vegetans. 4. The form of bullous dermatitis described as pemphigus foliaceus. 5. Dermatitis herpetiformis. The boundaries of this form could not at present be strictly drawn. 6. There remained a class of cases characterized by the more or less constant recurrence of pure bullae, without signs of multiformity, and with a certain symmetry of the lesions, which were frequently found on the mucous membrane. The affection was accompanied by very few subjective symptoms, and pursued a chronic and usually fatal course. This was the form

described as chronic pemphigus by Brocq and Besnier, and was the prototype of the German pemphigus.

The discussion of the subject of the classification of bullous diseases was opened by DR. JAMES C. JOHNSTON, of New York City, and continued by Dr. Samuel Sherwell, of Brooklyn, N. Y.; Dr. L. A. Duhring, Dr. M. B. Hartzell, Dr. Ravogli, Dr. J. Nevins Hyde, Dr. Jay F. Schamberg, Dr. Charles W. Allen, Dr. H. W. Stelwagon, Dr. William A. Pusey; Dr. H. C. Baum, of Syracuse, N. Y.; Dr. Charles J. White, and was closed by Drs. Bronson and Bowen.

ERYTHEMA PERSTANS, WITH REPORT OF TWO CASES INVOLVING CIRCINATE LESIONS.

DR. GROVER W. WENDE, of Buffalo, N. Y., read this paper, in which he offered the following conclusions: 1. That we were dealing with a variety of skin affections which might be included under the general name of "erythema perstans" which had points both of similarity and dissimilarity. In some, there were simple, chronic, inflammatory patches; in others, diffused patches, papules or nodules. Frequently, evolution began in the center, and left annular or gyrate figures. 2. There seemed to be no law governing their duration, since they might last weeks, months or years, or even during the entire life of the patient. The etiology might still be considered as obscure. No age was exempt, cases having been reported in children and in those advanced in years. The condition seemed to be more frequent in men than in women. 3. A study of the cases reported showed that the condition might be caused by intestinal toxemia, a gouty or rheumatic diathesis, or atmospheric changes. 4. The limited number of microscopical examinations that had been made revealed slight differences. All of the cases showed a superficial inflammation, dilatation of blood vessels, infiltration of cells and an edematous condition of the tissues.

CONSIDERATIONS ON PEMPHIGUS VEGETANS.

DR. A. RAVOGGI, of Cincinnati, Ohio, read this paper, and reported the following case: The patient was a married woman, twenty-five years old, a native of Russia, who had lived in this country for five years. She was married when she was twenty-three years old. Four months after her marriage, she noticed an eruption on her chest, which, according to her description consisted of red, erythematous patches, and later on of hard pimples, extending from the chest to the anterior part of the neck. These gave rise to a burning and slightly itching sensation. On Sept. 23, 1904, she gave birth to a healthy child, and from that time on she was free from any eruption until April, 1905. Then her navel was covered with a blister, which broke, leaving an excoriated surface oozing serum. Soon afterwards, her genitals began to itch and burn, and the whole pubic region and groins were covered with small white lesions containing clear water, which later became turbid. Bulle of the size of hazel nuts began to appear under her breasts and in both axillae, and these, on breaking down, left raw surfaces, oozing, and then granulating. Bulle also appeared in the mouth and on the lips. Both axillae subsequently became filled with masses of grayish-brown vegetations, resembling cauliflower-like growths. Death occurred on Oct. 25, 1905, of diarrhea and exhaustion.

TWO CASES OF MULTIPLE TUMORS OF THE SKIN IN NEGROES ASSOCIATED WITH ITCHING.

DR. JAY F. SCHAMBERG and DR. ROSE HIRSCHLER, of Philadelphia, Pa.: The paper gave the clinical histories of two cases of long-standing nodular growths in the skin of negro women. The disease was possibly

the same as that described by Dr. W. A. Hardaway, under the name "Multiple Tumors of the Skin Accompanied by Intense Pruritus." The essential features in the two cases, which were almost identical, were as follows: 1. The development of tubercles and tumors in the skin, principally of the extremities, accompanied by more or less severe itching. 2. The horny, resistant character of the epidermis overlying the growths. 3. The persistence of the tubercles and itching for many years. 4. The recurrence of the nodules after extirpation. The two nodules which were excised in the first case were replaced by tumors of the same character as those removed. The cause of the disorder was undetermined. The theory that the growths might be the result of traumatism from scratching was neither borne out by the statements of the patients nor by the appearance of the lesions. Pathologically, the sequence of events appeared to be as follows: dilatation of the cutaneous blood vessels; cell infiltration, chiefly in sharply circumscribed masses; proliferation of the fixed connective tissue elements; formation of new collagenous fibers. A feature of more than passing interest was the great abundance of mast cells present.

TWO CASES OF PAGET'S DISEASE TREATED BY THE X-RAYS WITH A REPORT OF THE MICROSCOPIC FINDINGS IN ONE OF THEM AFTER PROLONGED TREATMENT.

DR. M. B. HARTZELL, of Philadelphia, Pa., said that from the results obtained by the treatment in the two cases of Paget's disease reported in this paper, and more particularly from the microscopic study of one of them after treatment had been continued for a considerable time, he believed we might conclude that the careful, systematic and prolonged use of the x-rays might completely and permanently cure the disease of the areola and nipple, but he also believed that this agent had very little effect upon the epithelial proliferation in the ducts of the nipple, and in the alveoli of the mammary glands. If Paget's disease was in the beginning limited to the areola and surface of the nipple, the ducts and mammary glands becoming involved only after some considerable time, then we might hope, by the early and persistent use of the x-rays, to bring about a complete and lasting cure; but if the ducts and glands were involved in the process from the beginning, the knife of the surgeon should be the first, and not the last resort. Which of these two views of the malady was the correct one, had, in the writer's opinion, not yet been definitely settled.

DR. CHARLES W. ALLEN thought that Paget's disease probably existed much as did mycosis fungoides, in a variety of stages, and that it passed through various degrees of malignancy, just as an innocent eczema of the lip might develop into a malignant lesion. The speaker could recall at least two cases in which the lesions looked very much like Paget's disease, but which cleared up under simple treatment, and the patients had remained well. In every case where the diagnosis of Paget's disease was beyond doubt, the breast should be removed.

DR. THOMAS C. GEORGE, of Baltimore, Md., said that Paget's disease, marked with epithelioma of the lip and tongue in the early lymphatic enlargement that it gave rise to, and he agreed with Dr. Shepherd that the breast should be ablated as soon as the diagnosis was established.

DR. HARTZELL in closing said that while ablation of the breast was the first consideration from the surgeon's point of view, the operation was a very serious one for the patient. Take, for example, a woman with a superficial excoriation of the nipple,

with redness and swelling of the areola. Probably, the lesion represented the early stage of Paget's disease, and it was in cases of that character that the question of treatment was surrounded with difficulties.

A CASE OF CHRONIC ULCERATION IN THE PUBIC REGION.

DR. S. FOLLITZER, of New York City: The patient was a married man, thirty-five years old, a native of the United States, and a railroad employee. His present illness began in Richmond, Va., on Oct. 29, 1901, when his attention was attracted to a small papule on the glans penis. Ten days later the papule was transformed into an ulcer, and within a few days a number of small "mattery sores," as the patient described them, appeared on the glans. Shortly afterwards he noticed a small papule on the pubic region over the symphysis, from which a sanious fluid was discharged. A small papule, like that on the pubis, also developed on the left side of his forehead. This broke down and ulcerated, but eventually healed. The sore on the pubis, however, proved rebellious to treatment, increasing in area and attaining the size of a silver dollar. In March, 1905, the patient went to Hot Springs, Ark., where he spent nearly three and a half months under the care of Dr. H. P. Collings, who regarded the ulcerations as chancreoidal. The patient for a short time was given mercury and the iodides, but under this treatment the ulcers seemed to grow worse. Locally, a variety of applications were made, and the condition would improve at times and then again grow worse. Repeated microscopic examinations gave negative results, and spreads and cultures yielded only the usual crop of saprophytic organisms, excepting a single colony of a bacillus which the speaker said he had not been able to identify. It was apparent from its characteristics that it did not belong to the pyocyanous group, with which, however, it shared some important features. A histological examination of sections cut from the border of the ulcers gave the usual picture of granulomatous tissue in a chronic inflammatory process of the skin. As the case was evidently not improving under external applications, it was excised. The patient was subsequently operated on at the Garfield Hospital, in Washington, D. C., for a tumor of the testis, which upon histological examination was apparently syphilitic. In concluding his paper, Dr. Follitzer expressed the opinion that this chronic ulceration in the pubic region represented a hitherto undescribed form of disease. That the bacillus had been isolated was the cause of the ulceration had not been proven, but there was a certain degree of probability in favor of that view.

DR. A. RAYGARD said he could recall quite a number of cases of ulcerative lesions involving or surrounding the genitals, in which it had been very difficult to establish whether they were tubercular or syphilitic, or the result of a mixture of both these diatheses.

DR. L. DESSAU BRIDGES said that in many of these cases the original lesion was much modified by the ordinary pus organisms, which were everywhere present.

DR. J. NEVINS HYDE referred to a number of similar cases of his own in which the ulcerative processes were not syphilitic, as they had resisted the most vigorous and thorough anti-syphilitic treatment. They had been described under the title of chancreoidal or lupoid ulceration of the genitalia and the most satisfactory treatment that he had had any experience with was continued immersion. The patients were placed in a carefully regulated hot bath, which they left only for necessary purposes until the ulceration had healed.

DR. CHARLES W. ALLEN said he agreed with Dr. Hyde in regard to the efficacy of the permanent bath in the treatment of this class of lesions, which had been described under the name of porosis, and were probably the result of a mixed infection.

A CASE OF RECURRENT BULLOUS ERUPTION OF THE FACE:
PROBABLY PEMPHIGUS HYSTERICUS.

DR. FRANCIS J. SHEPHERD, of Montreal: The case was that of an unmarried girl of twenty, who for the past eight years had suffered from a recurrent eruption on the face. This appeared first as small, inflamed blisters on the forehead, chin, cheek and nose; these soon increased to the size of a ten-cent piece, became filled with bloody serum, then discharged and formed scabs. There might be half a dozen or more of these blisters at one time. As a rule, the bullæ came out in successive crops, and lasted about a month. They gave rise to burning, but no itching. There was no regularity as to where the spots might come out, but they had never appeared on the hairy scalp. The blisters left a pigmented mark after healing. Dr. Shepherd said the cause of the eruption was obscure. It was possibly connected with menstruation. The girl's general health was excellent, and the speaker said he could not divest himself of the feeling that the eruption might be self-induced. At any rate, he was inclined to regard it as a tropho-neurosis.

DR. L. DUNCAN BULKLEY said he had a list of over ninety cases of skin lesions of various kinds, collected in private practice, which were apparently more or less directly connected with disturbances of the function of menstruation, and a thorough review of the literature would doubtless reveal many more.

DR. L. A. DUHRING said he was inclined to attribute these eruptions to different causes, in which the nervous system was more or less implicated. While menstruation was doubtless an important factor in some of them, there must be other factors as well, as the same types of eruption were met with in boys.

DR. ARTHUR VAN HARLINGEN mentioned the case of a colored girl in whom there were beginning blebs appearing at the time of the menstrual epoch. In that case, there was probably a hysterical element, together with a morbid condition of the skin.

The final session of the Association was devoted largely to the presentation of patients.

DR. C. T. DADE gave a demonstration of the uses of liquid air in the treatment of skin diseases.

carefully sifted and considered, before being set down in type. We heartily recommend the volume to those of whatever calling who desire to know the details of the seamy side of life.

Life Insurance Examinations: A manual for the Medical Examiner and for all interested in Life Insurance. By BRANDREITH SYMONDS, A.M., M.D., Medical Director Mutual Life Insurance Company of New York, etc. New York and London: G. P. Putnam's Sons. 1905.

Dr. Symonds is a lecturer in life insurance examinations at the University and Bellevue Hospital Medical College, and has embodied in this small volume of 214 pages the substance of his lectures, somewhat amplified. The book is a simple statement of the main facts necessary to the insurance examiner and may certainly, in a general way, be used with profit and safety. Certain statements regarding the nervous system are likely to leave a somewhat false impression with the reader.

Organotherapy, or Treatment by Means of Preparations of Various Organs. By H. BATTY SHAW, M.D. (Lond.), F.R.C.P., Lecturer in Therapeutics, University College, London; Assistant Physician to University College Hospital and to the Hospital for Consumption and Diseases of the Chest, Brompton. Illustrated. Chicago: W. T. Keener & Co. 1905.

This small volume of two hundred and fifty-six pages gives an excellent summary of the present status of Organotherapy. The author is conservative in his acceptance of extraordinary claims for such treatment and thus enhances the value of the book. Reference is made by footnotes to articles quoted and the bibliography of the subjects covered is fairly complete. The book is almost wholly a compilation from the literature. It is well written and will prove useful to the general reader and those carrying on research in organotherapy.

Handbook and Atlas of Orthopedic Surgery. By JAS. K. YOUNG, M.D. Philadelphia: P. Blakiston's Son & Co. 1905.

If the measure of the dignity and importance of any subject is given by the evidence of valued effort in the production of a treatise dealing with it, the ample work of Dr. Young, if for no other reason, merits careful attention. Dr. Oliver Wendell Holmes was fond of calling the attention of his class to the magnificence of the illustrations of the old Italian masterpieces of anatomy in which the human figure was superbly engraved, often holding out to the beholder the internal organs in attitudes of artistic grace.

The superb steel engraving in medical publication has given place to the more commonplace but more accurate halftone, but certainly even Aldus or Plantin would have been proud to have published a book of such attractive excellence. The book is a large and expensive one for the ordinary student, but it is one which the orthopedic surgeon will be glad to have in his library for reference and enjoyment.

Recent Literature.

Poverty. By ROBERT HUNTER. New York, London: The Macmillan Company. 1904.

In this volume of 382 pages is presented an assemblage of facts regarding the various aspects of poverty, from the pen of a man who knows whereof he writes. An attempt is made to define poverty, to estimate its extent in the United States, to bring to general knowledge its evils, and finally to suggest remedies. The headings of the chapters will indicate the scope of the book: Poverty, The Pauper, The Vagrant, The Sick, The Child, The Immigrant. The author writes with much sympathy of the conditions which he has met and studied. Particularly for the social economist, and also in less degree for the physician, the book should be stimulating, and useful as a compendium of facts, evidently

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THE CENTENNIAL OF THE BOSTON MEDICAL
 ASSOCIATION.

THE Boston Medical Association was formed in 1806 to take the place, apparently, of the short-lived Boston Medical Society formed in 1780. The original members of the Boston Medical Association numbered thirty.

The main object of the society was to establish rules which should guide physicians in their relation to each other and to the public. Accordingly, at the annual meeting in 1807 the standing committee, consisting of Drs. John Warren, Lemuel Hayward and John Hunt, were "instructed to propose a code of medical police to be submitted to the consideration of the Association at their next annual meeting."

The report was made at the appointed time and was accepted, and it was then recommended to the committee with instructions to print five hundred copies, to present to each member of the Association three copies and to distribute the remainder to other physicians of the state.

This report is an interesting document, admirable in style and should be read entire. The headings are, Consultations, Interferences, Differences of Physicians, Discouragement of Quackery, Conduct for the Support of the Medical Character, Fees, Exemption from Charges, Various Offices and Seniority.

Consultations are recommended but in connection with rivalry and jealousy are deprecated, while candor, justice and due respect are recommended towards the physician in charge, and it is stated he should be the one to deliver to the family the directions agreed on.

The consulting physician is not to visit without

the attending physician except at the latter's request or in an emergency. Whatever their private resentment or opinion of each other, physicians should divest themselves of all partialities and think only of those under their care. Mutual confidence between the physicians concerned is considered a necessity and in its absence a consultation should be declined. Punctuality is enjoined and fifteen minutes is made the limit of reasonable waiting. Expectation of business or employment is to be based on degrees of qualification, not on artifice and insinuation, and so "a certain undefinable species of assiduity and attention to the families under the care of another" are decreed as well as "meddling inquiries," etc.

Differences of physicians, if they cannot immediately be terminated and do not come under rules already made, should be referred to arbitration of the other members, but should not be made public.

The warnings against quack remedies and "secret nostrums," sound not unnatural just now.

Esprit de corps being held to be "a principle of action founded on human nature and being duly regulated, both rational and laudable," care is recommended to avoid contumacious representations of the faculty, all general charges against their selfishness or improbity and an affected or joocular skepticism regarding the healing art.

As to fees, it is deemed a point of honor to follow the established rules of the community, except in case of the poor, though no new fee-table was made out until later. Clergymen and physicians and their families are to be exempted, except under certain conditions.

"Whenever a physician officiates for another by his desire, in consequence of sickness or absence, if for a short time only, the attendance should be performed gratuitously as to the physician, and with the utmost delicacy towards the professional character of the gentleman previously connected with the patient."

Though questions of seniority and precedence do not disturb us now, the Association found it necessary at that time to provide that "seniority among practitioners of this town should be determined by the period of public and acknowledged practice as a physician or surgeon in the same." Apparently this arrangement was mostly aimed against "troublesome interlopers," by new settlers, perhaps not long stationary in the place.

Nowadays, many of these questions seem so well settled by long-established custom that we hardly feel the necessity for rules, but no doubt this is largely because this excellent code started the very customs on which we depend for guidance. Perhaps, too, it would be better if we adhered more closely to some of the rules that are now regarded as somewhat antiquated.

In 1830 Rules and Regulations, including a fee-table, were added to the Police Code. It was intended at that time that the Association should include all regular practitioners, and it was the rule that no member should consult with a physician not a member of the Association. But this rule must soon have become a dead letter and in 1864 it was changed so as to provide only against consulting with "irregular practitioners."

The fee-table of 1830 was revised in 1864 and again in 1884 (and perhaps oftener), and the rules and regulations have also been changed, but every report of the Association presents the Police Code, now one hundred years old, in its original form.

REPORT OF THE MASSACHUSETTS GENERAL HOSPITAL.

THE annual report of the Massachusetts General Hospital for the year 1905 is the ninety-second in the history of the institution and fills two hundred and seventy-five octavo pages. Although not so many changes have been made during the year as in certain years immediately preceding, nevertheless, the report shows the constant growth which the hospital is undergoing and the attention to details which tend to increase the total efficiency. No new buildings have been erected at the general hospital, but the Townsend and Bigelow wards have been completely renovated and thereby much improved. At the McLean Hospital at Waverley a new building for women, to be known as the Codman House, is being constructed as a result of the bequest of the late Edward W. Codman. The chapel at this department of the hospital has been completed and will soon be ready for use. A house for nurses is still needed. At the general hospital somewhat fewer patients were treated than in 1904, the total being 5,096, and somewhat fewer free patients were treated than during the preceding year. Upwards of three thousand fewer patients were treated in the Out-Patient Department than in 1904, the number being 21,874. How completely our

large hospitals have been given over to the treatment of acute cases is indicated by the fact that the average number of days during which patients have remained at the hospital is between nineteen and twenty. At the McLean Hospital also the number of patients treated was less than in 1904, although the average daily number of patients was 184 as against 183 in 1904. As improvements in administration should be mentioned the surgical apparatus shop which is self supporting and particularly useful in connection with the Orthopedic Department. Through a plan worked out by Dr. F. A. Washburn, absorbent gauze, formerly thrown away after a single use, is now used over and over again after a special system of washing and sterilization. Soap has also been manufactured at the hospital during the last year, and both of these measures have tended to reduce expense.

From the historical standpoint this report of the hospital will be looked back upon with interest as containing a statement regarding the resignation of Dr. John Collins Warren, who retired in January, 1905, thereby for the first time in the history of the hospital removing the name of Warren from the hospital roll. In accepting this resignation the following minute was placed on the records:

"John C. Warren and James Jackson inspired the efforts that led a generous public to establish this Hospital in 1814. Dr. Warren remained in the service of the Hospital until the year 1853. J. Mason Warren became a member of the Surgical Staff in 1846 and died in the service of the Hospital in 1867. John Collins Warren's name first appeared on the rolls of the Hospital in 1865, and with his resignation there closes for the present this illustrious succession through our whole history, of three men, father, son and grandson, who each in turn have been conspicuous for able, conscientious and devoted service to this great charity, — a service which deserves and receives the grateful notice of the Trustees, and the thanks of unnumbered patients who have profited by their skill and devotion."

THE JOURNAL OF ABNORMAL PSYCHOLOGY.

A NEW publication appeared last week under the editorial management of Dr. Morton Prince, of Boston, with whom are associated such well-known names as Professor Münsterberg and Drs. James J. Putnam, August Hoch, Boris Sidis, C. L. Dana and Adolf Meyer, to be known as the *Journal of Abnormal Psychology*. As its name implies, the *Journal* is designed to subserve the interests of both medicine and

psychology, with special reference to work embodying clinical and laboratory research in connection with abnormal mental states. The *Journal* will, therefore, discuss such topics as hysteria, amnesia, fixed ideas, obsessions, automatism, multiple personality and similar subjects which are now attracting attention as never before. It is evident that this field, although in a measure covered by periodicals already in existence, lays stress upon certain phases of the mental life which have hitherto been in a measure neglected or lost in publications devoted essentially to other branches of research. The general subject should appeal to physicians far more than it ordinarily does, since there can be little doubt that the future has in store for us revelations in this department of research which will be of the utmost social as well as medical importance. Dr. Prince's work in this line is well known, and it is fitting that he should represent it as it will now appear in the form of a bi-monthly periodical. This first number contains articles by Dr. Pierre Janet, Professor Von Bechterew, Dr. J. J. Putnam and Dr. Prince. The papers are all of interest and are a most fitting introduction to a publication which we hope will have a long and useful life.

REPORT ON THE RUTLAND HOSPITAL.

THE Massachusetts Executive Council, upon whom devolved the duty of submitting a report regarding the status of the Rutland Hospital for Tuberculosis, has sent in through its committee two reports, the first signed by all the members of the committee, and the other by two members. The general result of the investigation as embodied in the main report was that the summary dismissal of Dr. A. Y. Bowditch was very unfortunate; that the theories of management of the sanatorium varied, that the time has come when a resident expert should take the place of visiting physicians; that the Rutland Institution should not be further enlarged, and that more attention should be given by the trustees to the advice of the visiting physician. A minority report condemns in strong language the dismissal of Dr. Bowditch, and considers that radical changes in the management of the institution are desirable. The council voted to accept the reports of the committee and refer them to the Governor. A later rumor is to the effect that the trustees of the sanatorium are likely to resign when the official copies of the report are sent them. In

this connection it should be remembered that one member of the Board of Trustees, Dr. Getchell, has persistently opposed the policy of the majority, and has throughout upheld the position taken by Dr. Bowditch and the medical public in general.

MEDICAL NOTES

TYPHOID AT PITTSBURG.—An unusually large number of cases of typhoid fever have been reported at Pittsburg, Pa.

BUBONIC PLAGUE AT THE PHILADELPHIA QUARANTINE.—A steamer from Bombay is held at quarantine at Philadelphia having on board four cases of bubonic plague. Two lascars of the crew died on the voyage from this disease.

THE WISTAR INSTITUTE OF ANATOMY.—Important problems connected with the organization and promotion of anatomical research will receive the consideration of the committees of the advisory board of the Wistar Institute consisting of ten leading anatomists of the country at a meeting to be held from April 16 to 18 in Philadelphia. It is desired to establish relations with the International Association of Academies, thereby bringing the work of the institute into close touch with that abroad. Although the work to be undertaken is chiefly in the line of neurology, other departments of anatomy will not be neglected and it is hoped that students of promise will be sent from various institutions to the laboratories of the Wistar Institute for special investigation. Competent investigators, however, even though not affiliated with other institutions, will be welcome. For the present the institute will not undertake an independent publication but will make use of existing scientific journals.

RETIREMENT OF COL. JOHN D. HALL, SURGEON, U. S. A.—After thirty-eight years of honorable service, Col. John D. Hall, chief surgeon of the Department of California, was retired from his position and from active service in the Army on Saturday, March 17. Colonel Hall entered the service as an assistant surgeon on Dec. 14, 1868, having received his training at the Harvard and Columbia Medical schools. During the period of thirty years preceding the outbreak of the Spanish-American War Colonel Hall saw varied and active service in the Indian wars of Arizona, Texas, Montana and Dakota. In December, 1898, he was ordered to San Fran-

cisco to take charge of the medical supply depot, a position which he held until 1902, when he was ordered to the Philippines as chief surgeon of the department of the Visayas. In 1904 he was sent to Manila as chief surgeon of the department of Luzon, and in July of that year was appointed chief surgeon of the Philippines division. On his return to San Francisco in 1905 he received his last appointment.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON.—For the week ending at noon, April 11, 1906, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 42, scarlatina 46, typhoid fever 5, measles 157, tuberculosis 43, smallpox 0.

The death-rate of the reported deaths for the week ending April 11, 1906, was 20.77.

BOSTON MORTALITY STATISTICS.—The total number of deaths reported to the Board of Health for the week ending Saturday, April 7, 1906, was 247, against 232 the corresponding week of last year, showing an increase of 15 deaths and making the death-rate for the week 21.65. Of this number 138 were males and 109 were females; 242 were white and 5 colored; 147 were born in the United States, 95 in foreign countries and 5 unknown; 46 were of American parentage, 173 of foreign parentage and 28 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 52 cases and 2 deaths; scarlatina, 47 cases, no deaths; typhoid fever, 4 cases and 1 death; measles, 206 cases and 1 death; tuberculosis, 57 cases and 29 deaths; smallpox, no cases and no deaths. The deaths from pneumonia were 31, whooping cough 0, heart disease 29, bronchitis 11, and marasmus 3. There were 9 deaths from violent causes. The number of children who died under one year was 44; the number under five years, 62. The number of persons who died over sixty years of age was 62. The deaths in public institutions were 74.

There were 3 deaths and 4 cases of cerebro-spinal meningitis reported during the week.

NEW BOAT FOR THE BOSTON FLOATING HOSPITAL.—The new boat which is being built for the Boston Floating Hospital will cost, when fully equipped, \$95,000. This new boat has become an actual necessity, and the charitably disposed are strongly urged to support the enterprise by liberal contributions for its construction. The present boat, which is not self-

propelled, has become wholly inadequate to the needs of the service, as shown by the figures that in the first year 2,500 infants were cared for, whereas, the number last year was 9,763.

THE CENTENNIAL ANNIVERSARY OF THE BOSTON MEDICAL ASSOCIATION.—The celebration of the centenary of the Boston Medical Association will take place at Sprague Hall, in the Boston Medical Library Building, on Monday, May 7, at 8.15 P.M. There will be an address by Dr. David W. Cheever, a poem by Dr. J. Baptist Blake and reminiscences are expected from Drs. J. C. White, B. Joy Jeffries and F. H. Brown. Light refreshments will be served at the end of the meeting. A memorial pamphlet will be printed for distribution among the members. Application for membership may be made to Dr. Edwin H. Brigham at the Boston Medical Library. Members and non-members, resident in the Suffolk District of the Massachusetts Medical Society, are cordially invited to attend.

NEW YORK

GIFT TO A HOSPITAL.—Mr. and Mrs. Peter Quackenbush of New York have made a gift of \$10,000 to the Paterson (N. J.) General Hospital.

FELLOWSHIP FOR PATHOLOGICAL RESEARCH.—Dr. Benjamin Taylor Terry of Columbia University has offered Indiana University an endowment for pathological research in the form of a fellowship yielding \$750 a year.

CENTENARY MEDICAL SOCIETY, COUNTY OF NEW YORK.—The banquet in honor of the Centenary of the Medical Society of the county of New York was held in the large ball room of the Waldorf-Astoria Hotel on April 4, and the attendance was large and enthusiastic. The chairman of the committee having it in charge was Dr. Edward D. Fisher, a former president of the Society, and addresses were made by the President, Dr. Floyd M. Crandall, Dr. William M. Polk, the Rev. Dr. Fagnani, Judge Hedges and Dr. Samuel B. Ward, of Albany.

COMPLIMENTARY DINNER TO DIRECTORS OF SYDENHAM HOSPITAL.—On April 2 a complimentary dinner was given to the board of directors of the Sydenham Hospital by the medical board of the hospital. On this occasion a loving cup was presented by his fellow directors to Isaac Guggenheim, Chairman of the Finance Committee, in recognition of the generosity on his part which made possible the founding of the institution. It is stated that at the last meeting of

the board of directors Mr. Guggenheim expressed his willingness to duplicate his previous gift of \$250,000 to the Sydenham Hospital.

PRIMARY SCHOOL FOR FEMALE NURSES.—A primary school for women nurses, on the general plan of the Probationers' Home of the Johns Hopkins Hospital in Baltimore, was opened on April 5 in connection with the Bellevue Hospital Training School. The pupils will have a course of three months in such matters as the care of the sick room, cooking and the feeding of patients, and at the end of it will be required to pass an examination in these preliminaries as a qualification for entrance to the regular training school. The object of the new department is to relieve the school of its primary classes, and during the three months' course the probationers will receive free board and lodging at the Nurses' Home.

HOSPITAL FOR CONTAGIOUS DISEASES, JERSEY CITY.—The Jersey City Board of Health, at a meeting held April 6 at which there was a prolonged discussion, adopted a resolution excluding all visitors from the Health Department's hospital for contagious diseases on the Hackensack Meadows. The original resolution, as offered by Dr. William McLaughlin, called for the exclusion only of the parents of children in the hospital. He expressed the opinion that, while it was hard to deny a mother the consolation of seeing her child when possibly it might be near death, such a rule was necessary to prevent the spread of disease. An amendment, which was finally adopted with the original resolution, to the effect that no persons whatever should be admitted to the hospital to visit patients, was presented by Dr. Frank Gray, President of the board. He contended that the exclusion of parents would only partly guard against the danger of the spread of infection, and that the public safety demanded the exclusion of all visitors.

Miscellany.

ARSENIC IN WINES.

H. D. Gibbs and C. C. James, who, we are informed, are careful investigators, reach the following conclusions regarding the occurrence of arsenic in wines.

We find that arsenic, in small quantities, occurs as an accidental ingredient of some wines, and we have undertaken this investigation for the purpose of locating the source for the benefit of the wine industry. We are confident that as soon as the origin is discovered this

ingredient will practically disappear as a menace. Total number of samples examined, 329; number in which arsenic was found, 38.

Of the samples containing arsenic, nineteen were bottled wines and nineteen were taken from the cask.

The largest amounts found and measured quantitatively are one part in 20,000,000. The limit of tolerance set by the British Commission on Arsenical Poisoning for beer is 0.01 grain per gallon, about one part in 7,000,000. This limit as applied to wine would undoubtedly be considered too exacting, for wine is usually consumed in much less quantities than beer.

In all probability arsenic never occurs in quantities sufficient to produce toxic effects; however, much of that found can undoubtedly be excluded by care upon the part of those engaged in the wine industry.

The arsenic which is present in some samples of wine cannot, in our opinion, be attributed to one source.

The most probable sources of the major part of that found are, arsenical sprays when used upon the vines, sulphur burned for the purpose of sulphuring the vines and receptacles, and perhaps to some extent the lead shot used in cleaning the bottles.

AN ARMY FIELD HOSPITAL AT BOSTON DURING THE A. M. A. MEETING.

THE Surgeon General's office of the United States War Department at Washington granted the request of the Boston Committee of Arrangements of the American Medical Association to have a field hospital stationed at Boston during the coming annual meeting of the American Medical Association on the following grounds:

It is recommended that this request be granted as for the good of the service. The medical department, which in time of peace is too small for the needs of the army, is in the time of war absolutely dependent for expansion upon the medical practitioners in civil life, and each one of these should be regarded as potentially a reserve medical officer. It is, therefore, to the highest degree important that medical men throughout the country be brought to understand and sympathize as much as possible with the military medical service and be made familiar with its equipment and methods of work. The American Medical Association is the representative medical organization of the country, embracing, as it does, more than 2,000 state and county societies with an enrolled membership of 80,000.

The personnel for a field hospital could be provided by ordering Company A of the Hospital Corps, stationed in Washington, to Boston, and it has on hand all the field hospital equipment necessary with the exception of ambulances, a few of which could be procured from posts in the vicinity of Washington, or Boston, as may be most convenient.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, MARCH 31, 1906.

| CITIES. | Reported deaths in each. | Deaths under five years. | CITIES. | Reported deaths in each. | Deaths under five years. |
|----------------------|--------------------------|--------------------------|----------------------|--------------------------|--------------------------|
| New York | 1658 | 548 | Quincy | 2 | 4 |
| Chicago | — | — | Waltham | 5 | 1 |
| Philadelphia . . . | 625 | 193 | Glocester | 9 | 1 |
| St. Louis | — | — | Marlborough . . . | 6 | 1 |
| Baltimore | 233 | 77 | Brookline | 9 | — |
| Cleveland | — | — | North Adams . . . | 2 | 5 |
| Buffalo | — | — | Chicopee | 9 | 4 |
| Pittsburg | — | — | Norhampton | 4 | 0 |
| Cincinnati | — | — | Medford | 4 | — |
| Milwaukee | — | — | Beverly | 10 | 3 |
| Washington | — | — | Hyde Park | 2 | 0 |
| Providence | 32 | 30 | Newburyport | 1 | 3 |
| Boston | 222 | 65 | Leominster | 5 | 3 |
| Worcester | 39 | 12 | Melrose | 5 | 2 |
| Fall River | 45 | 28 | Woburn | 6 | 3 |
| Cambridge | 22 | 11 | Marlborough | 7 | 1 |
| Lowell | 46 | 18 | Westfield | 4 | 1 |
| Lynn | 29 | 2 | Peabody | 1 | — |
| New Bedford | 26 | 10 | Revere | 2 | 1 |
| Springfield | 33 | 23 | Clinton | 2 | 1 |
| Lawrence | 30 | 8 | Attleboro | 2 | 2 |
| Somerville | 29 | 10 | Adams | 3 | — |
| Holyoke | 14 | 4 | Garfield | 1 | 3 |
| Brookton | 19 | 3 | Milford | 1 | — |
| Malden | 16 | 6 | Weymouth | 1 | — |
| Salem | 18 | 3 | Framingham | 4 | — |
| Chelsea | 17 | 6 | Watertown | 1 | 1 |
| Haverhill | 19 | 9 | Plymouth | — | — |
| Newton | 9 | 2 | Southbridge | — | — |
| Fitchburg | 13 | 7 | Wakefield | 12 | 2 |
| Taunton | 8 | 1 | Webster | — | — |
| Everett | 6 | 1 | | | |

SOCIETY NOTICE.

ANNUAL MEETING MAINE MEDICAL ASSOCIATION.—By vote of the Board of Censors of the Maine Medical Association, the dates of the annual meeting have been advanced to the second week in June, June 13, 14 and 15. This change has been made so that our dates will not conflict with those of the American Medical Association, which meets in Boston during the first week in June.

WALTER E. TORIE, *Secretary*.

RECENT DEATH.

DR. JAMES W. SMITH, of Paterson, N. J., died from pleuro-pneumonia on March 29, at the age of forty-nine years. He was born in Paterson and was graduated from Bellevue Hospital Medical College in 1882. Later he served as an interne at St. Joseph's Hospital, Paterson, and ever since has been on the visiting staff of the hospital. He was assistant health officer of the City of Paterson, and was in charge of the Isolation Hospital which received the first prize at the Buffalo exposition. In 1893, he was appointed a member of the board of managers of the New Jersey State Insane Asylum at Morris Plains, and at the time of his death he was president of the board. He was closely identified with educational matters in Paterson, and for fifteen years had been a member of the School Board.

BOOKS AND PAMPHLETS RECEIVED.

Department of the Interior. Bureau of Government Laboratories. New or Noteworthy Philippine Plants. I. The Source of Manila Elemi. By Elmer D. Merrill. Manila. September, 1905.

University of California Publications. Physiology. On the Changes in the Nerve and Muscle which seem to Underlie the Electrotonic Effects of the Galvanic Current. By Jacques Loeb.

The Pathology of the Eye. By J. Herbert Parsons, B.S., D.Sc. (London), F.R.C.S. (Eng.) Vol. II, Part II. New York: G. P. Putnam's Sons. London: Hodder & Stoughton. 1905.

Department of the Interior. Bureau of Government Laboratories. Biological Laboratory. Note on a Case of Hemato-chyluria, together with Some Observations on the Morphology of the Embryo Nematode Filaria nocturna. By William B. Wherry, M.D., and John R. McDill, M.D. A Search into the Nitrate and Nitrite Content of Witte's "Peptone," with

Special Reference to its Influence on the Demonstration of the Indol and Cholera-Red Reactions. By William B. Wherry, M.D. Manila. May, 1905.

Department of the Interior. Bureau of Government Laboratories. Biological Laboratory. Further Observations on Fibrin Thrombosis in the Glomerular and Other Renal Vessels in Bulbous Plague. By Maximilian Herzog, M.D. Manila. June, 1905.

My System. Fifteen Minutes' Work a Day for Health's Sake. By J. P. Müller, ex-Lieutenant of Engineers, Klampenborg, Denmark. Authorized translation by G. M. Fox-Davies. Illustrated. Copenhagen: Tilling's Boghandel. New York: G. E. Stecher & Co. 1905.

The Animal Parasites of Man. A Handbook for Students and Medical Men. By Dr. Max Braun. Third enlarged and improved edition. Translated from the German by Pauline Faleke. Brought up to date by Louis W. Sambon, M.D. (Naples), and Fred V. Theobald, M.A. Illustrated. New York: William Wood & Co. 1906.

A Text-Book of Psychiatry for Physicians and Students. By Leonardo Bianchi, M.D. Authorized translation from the Italian by James H. Macdonald, M.B., Ch.B. (Glasg.) Illustrated. New York: William Wood & Co. 1906.

The Changes Produced by Inflammation of the Conjunctiva (Huntarian Lectures, 1885). By M. S. Mayon, F.R.C.S. S. New York: William Wood & Co. 1905.

Twenty-seventh Annual Report of the State Board of Charity of Massachusetts. Boston. January, 1906.

Études sur le Traitement des Fractures des Membres. Par les Docteurs J. Guillaux, L. Eissenack, J. Faidherbe, A. David, L. Merveille et Ad. Péllet. Paris: J. Roussel, 1906.

Handbook for Attendants on the Insane. With an Appendix giving the Regulations for the Training and Examination of Candidates for the Certificate of Proficiency in Nursing of the Medico-Psychological Association of Great Britain and Ireland. By the Medico-Psychological Association. Fourth edition, reprinted with revised regulations. Illustrated. London: Baillière, Tindall & Cox. Chicago: W. T. Keener & Co.

The Diseases of Infancy and Childhood. Designed for the Use of Students and Practitioners of Medicine. By Henry Koplik, M.D. Second edition, thoroughly revised and enlarged. Illustrated. New York and Philadelphia: Lea Brothers & Co. 1906.

Lectures on Tropical Diseases, being the Lane Lectures for 1905. Delivered at Cooper Medical College, San Francisco, U.S.A., August, 1905. By Sir Patrick Manson, K.C.M.G., M.D., LL.D. (Aber.), F.R.C.P. (London), F.R.S., Hon. D. Sc. (Oxon.) Illustrated. Chicago: W. T. Keener & Co. 1905.

The Surgical Treatment of Chronic Suppuration of the Middle Ear and Mastoid. By Seymour Oppenheimer, M.D. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1906.

Materia Medica, Pharmacy and Therapeutics, including the Physiological Action of Drugs, the Special Therapeutics of Disease, Official and Practical Pharmacy, Minute Directions for Prescription Writing and Avoiding Incompatibility, also the Antidotal and Antagonistic Treatment of Poisoning. By Samuel O. L. Potter, A.M., M.D., M.R.C.P. (London). Tenth edition. Revised, and in greater part rewritten. Philadelphia: P. Blakiston's Son & Co. 1905.

An Atlas of Human Anatomy for Students and Physicians. By Carl Osborn, M.D., and Professor Alois Dally, M.D. Translated from the third German edition and adapted to English and American and International Terminology. By M. Eden Paul, M.D. Brux., M.R.C.S., L.R.C.P. Sixth edition. Neurology. The Organs of the Senses. Illustrated. London: Rebusan, Limited. New York: Rebusan Co.

A Laboratory Manual of Physiological Chemistry. By Albert W. Rockwood, M.D., Ph.D. Second edition, revised and enlarged. Illustrated. Philadelphia: F. A. Davis Co. 1906.

Christianity and Sex Problems. By Hugh Northcote, M.A. Philadelphia: F. A. Davis Co. 1906.

The Physical Examination of Infants and Young Children. By Theron Wendell Kilmer, M.D. Illustrated. Philadelphia: F. A. Davis Co. 1906.

The Prevention and Cure of Tuberculosis. A Collection of Articles of a Popular Character on the Subject of Tuberculosis. By various authors. Compiled by Joseph R. Long. Illustrated. Denver: H. M. Brinker. 1905.

Adjuster's Manual. For the Settlement of Accident and Health Claims. By C. H. Harbaugh, M.D. New York: The Spectator Co.

The Practice of Medicine. A Text-Book for Practitioners and Students with Special Reference to Diagnosis and Treatment. By James T. Tyson, M.D. Fourth edition, revised and enlarged. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1906.

Original Articles.

A CLINICAL AND ANATOMICAL STUDY OF RESISTANT FORWARD SHOULDERS.

BY G. W. FITZ, M.D., BOSTON.
Orthopedic Surgeon, Boston Dispensary.

HAVING had the inadequacy of the literature relating to round shoulders forced upon my attention through my inability to find any satisfactory discussion of its fundamental conditions, I was led to undertake its systematic study. The results of this study are based upon many dissections and experiments upon the cadaver which gave the necessary clue to the solution of the numerous perplexing problems disclosed by the examination of round shoulder cases.

The dissections and experiments upon the cadaver,* nearly one hundred in number, had for their object the determination of the causes of resistance to movements in the cardinal directions, downward, forward, upward, backward. By cutting away part after part, it was possible to determine the amount of resistance offered to the movements by each part successively.

All shoulder movements must necessarily be considered as centering at the sternal articulation of the clavicle, and, with the clavicle as a radius, as describing about this center arcs which may be considered as portions of the spherical surface which includes all the possible arcs traceable by the point of the shoulder through the range of motion permitted by the restraining tissues. These motions are controlled by the muscles running from the trunk to scapula, clavical and humerus.

Of these muscles, the ones of primary interest to us are the pectorals, the serratus, the rhomboids and the trapezius.

It has long been held by orthopedists that the pectorals are responsible for resistant round shoulders but in my dissections I early became convinced of what my clinical observations had led me to infer, viz., that it was rarely possible for the pectorals to limit the backward movement by their shortness for the reason that the upward stretching of the arms, of which constant practice keeps every one capable, stretches the pectoral muscles much further than they can possibly be stretched in the corrected backward position owing to the extensive raising of the shoulder in the upward arm stretch.

I found in my dissections that the excess of length of the pectorals in the upward stretch of the arms, as compared with that of the backward position with the arms down, varies from two to three inches, and that in no one of at least seventy-five regular dissection subjects examined was there any suggestion of a pectoral muscle not freely permitting the upward stretch of the arms. In striking contrast to this I found in all of the subjects a distinct elastic resistance to the backward movement of the shoulder when the pectorals were cut away and the serratus alone of the forward acting muscles remained. This elastic resistance disappeared wholly when the serratus was cut.

In most cases after the serratus was cut, the only limitation to the backward movement was caused by the clavicle resting upon the ribs. In certain cases, however, I found the backward movement of the shoulder prevented by the throwing inward of the posterior border of the scapula. Only by cutting the coraco-clavicular or the acromio-clavicular ligaments was it possible to get unrestricted backward movement of the shoulders. Their downward movement was resisted in these cases also by the pressure of the lower angle of the scapula against the ribs. This became free when the coraco-clavicular ligament was cut.

In almost all of the subjects there was much freer motion of the shoulder backward after the coraco-clavicular ligament was cut. It was easily possible to distinguish between the non-elastic resistance offered by this ligament and the elastic resistance of the serratus. In some cases there was also some resistance offered by the sub-clavicular fascia which passes mainly from the first rib outward and backward to the coracoid process and consists of a somewhat indefinite bundle of strong fibers attached to the inner side of that process.

Aside from these sources of resistance the movements of the shoulders were found to be free in their normal ranges as permitted by fascia, skin, etc. In no case did I find restriction to the forward or upward movement of the shoulders in the dissection subjects.

In order to determine to what degree similar conditions existed in living subjects, a systematic examination and record of round shoulder cases was made as opportunity offered upon a total of 56 cases of distinct round shoulders so marked as to require treatment, of which 18 were classified on clinical grounds as voluntarily correcting or postural cases and 38 as non-correcting or resistant cases. These cases were systematically measured as to all significant points in relation to natural position of shoulders, range of move-

TABLE I.
SHOULDER POSITION AND HORIZONTAL SWING

| Angle | Natural Position | | | Forward Limit | | | Backward Limit | | |
|-------|------------------|----|-----|---------------|----|-----|----------------|----|-----|
| | I | II | III | I | II | III | I | II | III |
| 55 | | | | | | | | | |
| 50 | | | | 1 | 2 | | | | |
| 45 | | | | 11 | 3 | 7 | | | |
| 40 | 2 | | | 21 | 4 | 14 | | | |
| 35 | 5 | 1 | 3 | 3 | 8 | 11 | | | |
| 30 | 6 | 3 | 1 | | 6 | | | | |
| 25 | 11 | 5 | 8 | | | | | | |
| 20 | 9 | 1 | 8 | | | | | | |
| 15 | 2 | 5 | 7 | | | | | | |
| 10 | 2 | | 10 | | | | 5 | | 1 |
| 5 | 1 | | 1 | | | | 13 | | 5 |
| 0 | | | | | | | 11 | 6 | 21 |
| -5 | | | | | | | 8 | 9 | 8 |
| -10 | | | | | | | 1 | 1 | 1 |

38 18 38 38 18 18 38 18 18

Zero stands for the angle when the subject is erecting the trunk of the body. Angle I stands for the angle when the subject is standing with the arms down. Angle II stands for the angle when the subject is standing with the arms raised to the right. Angle III stands for the angle when the subject is standing with the arms raised to the left. Angle IV stands for the angle when the subject is standing with the arms raised to the front.

In the tables III, I, II, III, IV, V, VI, VII, VIII, IX, X, XI, XII, XIII, XIV, XV, XVI, XVII, XVIII, XIX, XX, XXI, XXII, XXIII, XXIV, XXV, XXVI, XXVII, XXVIII, XXIX, XXX, XXXI, XXXII, XXXIII, XXXIV, XXXV, XXXVI, XXXVII, XXXVIII, XXXIX, XL, XLI, XLII, XLIII, XLIV, XLV, XLVI, XLVII, XLVIII, XLIX, L, LI, LII, LIII, LIV, LV, LVI, LVII, LVIII, LIX, LX, LXI, LXII, LXIII, LXIV, LXV, LXVI, LXVII, LXVIII, LXIX, LXX, LXXI, LXXII, LXXIII, LXXIV, LXXV, LXXVI, LXXVII, LXXVIII, LXXIX, LXXX, LXXXI, LXXXII, LXXXIII, LXXXIV, LXXXV, LXXXVI, LXXXVII, LXXXVIII, LXXXIX, XL, XLI, XLII, XLIII, XLIV, XLV, XLVI, XLVII, XLVIII, XLIX, L, LI, LII, LIII, LIV, LV, LVI, LVII, LVIII, LIX, LX, LXI, LXII, LXIII, LXIV, LXV, LXVI, LXVII, LXVIII, LXIX, LXX, LXXI, LXXII, LXXIII, LXXIV, LXXV, LXXVI, LXXVII, LXXVIII, LXXIX, LXXX, LXXXI, LXXXII, LXXXIII, LXXXIV, LXXXV, LXXXVI, LXXXVII, LXXXVIII, LXXXIX, XL, XLI, XLII, XLIII, XLIV, XLV, XLVI, XLVII, XLVIII, XLIX, L, LI, LII, LIII, LIV, LV, LVI, LVII, LVIII, LIX, LX, LXI, LXII, LXIII, LXIV, LXV, LXVI, LXVII, LXVIII, LXIX, LXX, LXXI, LXXII, LXXIII, LXXIV, LXXV, LXXVI, LXXVII, LXXVIII, LXXIX, LXXX, LXXXI, LXXXII, LXXXIII, LXXXIV, LXXXV, LXXXVI, LXXXVII, LXXXVIII, LXXXIX, XL, XLI, XLII, XLIII, XLIV, XLV, XLVI, XLVII, XLVIII, XLIX, L, LI, LII, LIII, LIV, LV, LVI, LVII, LVIII, LIX, LX, LXI, LXII, LXIII, LXIV, LXV, LXVI, LXVII, LXVIII, LXIX, LXX, LXXI, LXXII, LXXIII, LXXIV, LXXV, LXXVI, LXXVII, LXXVIII, LXXIX, LXXX, LXXXI, LXXXII, LXXXIII, LXXXIV, LXXXV, LXXXVI, LXXXVII, LXXXVIII, LXXXIX, XL, XLI, XLII, XLIII, XLIV, XLV, XLVI, XLVII, XLVIII, XLIX, L, LI, LII, LIII, LIV, LV, LVI, LVII, LVIII, LIX, LX, LXI, LXII, LXIII, LXIV, LXV, LXVI, LXVII, LXVIII, LXIX, LXX, LXXI, LXXII, LXXIII, LXXIV, LXXV, LXXVI, LXXVII, LXXVIII, LXXIX, LXXX, LXXXI, LXXXII, LXXXIII, LXXXIV, LXXXV, LXXXVI, LXXXVII, LXXXVIII, LXXXIX, XL, XLI, XLII, XLIII, XLIV, XLV, XLVI, XLVII, XLVIII, XLIX, L, LI, LII, LIII, LIV, LV, LVI, LVII, LVIII, LIX, LX, LXI, LXII, LXIII, LXIV, LXV, LXVI, LXVII, LXVIII, LXIX, LXX, LXXI, LXXII, LXXIII, LXXIV, LXXV, LXXVI, LXXVII, LXXVIII, LXXIX, LXXX, LXXXI, LXXXII, LXXXIII, LXXXIV, LXXXV, LXXXVI, LXXXVII, LXXXVIII, LXXXIX, XL, XLI, XLII, XLIII, XLIV, XLV, XLVI, XLVII, XLVIII, XLIX, L, LI, LII, LIII, LIV, LV, LVI, LVII, LVIII, LIX, LX, LXI, LXII, LXIII, LXIV, LXV, LXVI, LXVII, LXVIII, LXIX, LXX, LXXI, LXXII, LXXIII, LXXIV, LXXV, LXXVI, LXXVII, LXXVIII, LXXIX, LXXX, LXXXI, LXXXII, LXXXIII, LXXXIV, LXXXV, LXXXVI, LXXXVII, LXXXVIII, LXXXIX, XL, XLI, XLII, XLIII, XLIV, XLV, XLVI, XLVII, XLVIII, XLIX, L, LI, LII, LIII, LIV, LV, LVI, LVII, LVIII, LIX, LX, LXI, LXII, LXIII, LXIV, LXV, LXVI, LXVII, LXVIII, LXIX, LXX, LXXI, LXXII, LXXIII, LXXIV, LXXV, LXXVI, LXXVII, LXXVIII, LXXIX, LXXX, LXXXI, LXXXII, LXXXIII, LXXXIV, LXXXV, LXXXVI, LXXXVII, LXXXVIII, LXXXIX, XL, XLI, XLII, XLIII, XLIV, XLV, XLVI, XLVII, XLVIII, XLIX, L, LI, LII, LIII, LIV, LV, LVI, LVII, LVIII, LIX, LX, LXI, LXII, LXIII, LXIV, LXV, LXVI, LXVII, LXVIII, LXIX, LXX, LXXI, LXXII, LXXIII, 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LXIII, LXIV, LXV, LXVI, LXVII, LXVIII, LXIX, LXX, LXXI, LXXII, LXXIII, LXXIV, LXXV, LXXVI, LXXVII, LXXVIII, LXXIX, LXXX, LXXXI, LXXXII, LXXXIII, LXXXIV, LXXXV, LXXXVI, LXXXVII, LXXXVIII, LXXXIX, XL, XLI, XLII, XLIII, XLIV, XLV, XLVI, XLVII, XLVIII, XLIX, L, LI, LII, LIII, LIV, LV, LVI, LVII, LVIII, LIX, LX, LXI, LXII, LXIII, LXIV, LXV, LXVI, LXVII, LXVIII, LXIX, LXX, LXXI, LXXII, LXXIII, LXXIV, LXXV, LXXVI, LXXVII, LXXVIII, LXXIX, LXXX, LXXXI, LXXXII, LXXXIII, LXXXIV, LXXXV, LXXXVI, LXXXVII, LXXXVIII, LXXXIX, XL, XLI, XLII, XLIII, XLIV, XLV, XLVI, XLVII, XLVIII, XLIX, L, LI, LII, LIII, LIV, LV, LVI, LVII, LVIII, LIX, LX, LXI, LXII, LXIII, LXIV, LXV, LXVI, LXVII, LXVIII, LXIX, LXX, LXXI, LXXII, LXXIII, LXXIV, LXXV, LXXVI, LXXVII, LXXVIII, LXXIX, LXXX, LXXXI, LXXXII, LXXXIII, LXXXIV, LXXXV, LXXXVI, LXXXVII, LXXXVIII, LXXXIX, XL, XLI, XLII, XLIII, XLIV, XLV, XLVI, XLVII, XLVIII, XLIX, L, LI, LII, LIII, LIV, LV, LVI, LVII, LVIII, LIX, LX, LXI, LXII, LXIII, LXIV, LXV, LXVI, LXVII, LXVIII, LXIX, LXX, LXXI, LXXII, LXXIII, LXXIV, LXXV, LXXVI, LXXVII,

ments in various planes, condition of muscles and ligaments, chest depths and girths, height, weight, diagnosis, age, etc.

Table I gives the number of cases occurring at each 5° of angular measurement for natural position, forward and backward swing of the shoulders. The measurements were made by means of a long armed protractor especially designed for the purpose (see Fig. 1), which was applied to the flat portion of the back of the shoulder where the ridge of the spine of the scap-

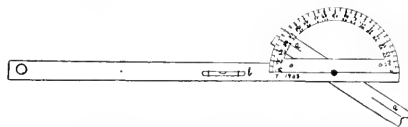


FIG. 1. Protractor with celluloid arms and spirit level. (a) indicator for reading arcs on protractor scale subtended by angles of arms; (b) spirit level for angles in vertical planes. Scale = 4.

ula is nearly subcutaneous. This point was adopted for the reason that it lay in the transverse straight line across both shoulders when they were in correct position. Therefore, the angles measured between the line of the spine and this transverse line represent fairly the horizontal relation of the shoulder to the correct position.

It shows that the mean position of the resistant group is almost 25° forward of the transverse shoulder line; for the self-correcting group slightly less, and for the gymnasium group about 15°; also that the forward swing is slightly greater in the first group, whereas the backward swing is considerably less in both the resistant and the gymnasium group.

The range of movement in the three classes forward and back from the natural position and the total swing are shown graphically in Fig. II.

TABLE II.

SHOULDER POSITION AND VERTICAL MOVEMENTS.

| | Normal | | | Upward | | | Downward | | | Range | | |
|------|--------|----|-----|--------|----|-----|----------|----|-----|-------|----|-----|
| | I | II | III | I | II | III | I | II | III | I | II | III |
| 60° | | | | 1 | | | | | | 1 | 1 | |
| | | | | 2 | | | | | | 7 | 4 | |
| 50° | | | | 10 | 9 | | | | | 7 | 6 | 1 |
| | | | | 7 | 3 | | | | | 5 | 5 | 4 |
| 40° | | | | 6 | 5 | 3 | | | | 8 | 1 | 2 |
| | | | | 9 | | 3 | | | | 7 | 1 | 5 |
| 30° | | | | 3 | 1 | 15 | | | | 1 | | 13 |
| | | | | 1 | | 5 | | | | 2 | | 6 |
| 20° | | | | | | 9 | | | | | | 1 |
| | | | | | | 3 | | | | | | 6 |
| -10° | 10 | 3 | 4 | | | | 5 | 1 | 2 | | | |
| | 11 | 8 | 27 | | | | 15 | 10 | 18 | | | |
| 0° | 14 | 6 | 13 | | | | 14 | 4 | 17 | | | |
| | | | | | | | 3 | 3 | 3 | | | |
| +10° | | | | | | | | | | | | |
| | 38 | 18 | 44 | 39 | 18 | 44 | 37 | 18 | 40 | 38 | 19 | 37 |

Table II shows the distribution of cases in relation to the range of angular movement of the shoulders and their natural position in a vertical plane. The line of reference used in the measurement of the angles is the horizontal transverse line across the shoulders at the level of the interclavicular notch. The angles of the shoulders in relation to this line were measured by means of a large celluloid protractor with a level glass (see Fig. III) especially designed to be applied to the interclavicular notch. Through

this protractor the shoulder could be seen and its level measured upon the graduated arc. The angles measure approximately the inclination of the clavicle in the different shoulder positions. Measurements above the horizontal line are considered negative; below, positive. It will be noted in the tables that there is a tendency in the observations to a distribution in the form of a binomial curve.

The Pectorals.—In the dissections I found, as I had always observed clinically, that the pectoral muscles were seldom tight but, on the contrary, were normally elastic when the shoulder was in corrected position. Even when the arm was raised over the head and the attachment of the pectoralis major thereby removed to an additional distance of several inches from its origin, the muscle rarely became tight. Apparently the upward stretching of the arms, an exercise from which no one escapes, is sufficient to keep the greater pectoral so stretched as to eliminate it as a factor in round shoulders.

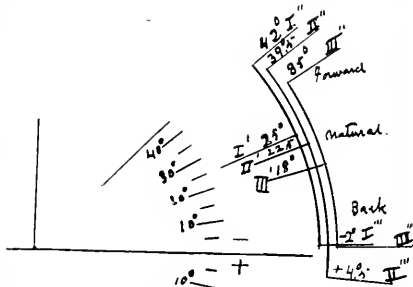


FIG. 2. Average natural shoulder inclination forward and average forward and backward swing of shoulders plotted graphically for groups I, II and III. I' = Natural; I'' = Forward; I''' = backward. Range of swing: I = 40°; II = 44°; III = 33°.

TABLE III.

AVERAGE LENGTH OF PECTORAL MUSCLES IN THIRTY-ONE ROUND SHOULDER CASES.

| | Shoulder: natural position, arm down. | Shoulder: back, arm down. | Arm up stretch. |
|------------|---|---------------------------------|--------------------|
| Pect. Maj. | 13.5 cm. | 15.6 cm. | 21.1 cm. |
| Pect. Min. | 9.0 cm. | 9.7 cm. | 11.0 cm. |

By reference to Table III it will be observed that in round shoulder cases there exists the

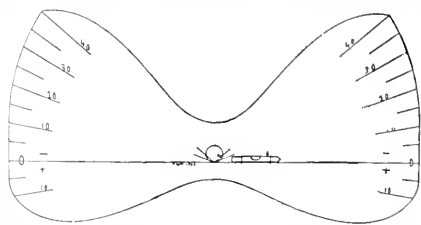


FIG. 3. Protractor of transparent celluloid for measuring angular heights of shoulders: (a) knob or finger hole applied to interclavicular notch; (b) a spirit level for adjusting protractor. Scale = 4.

same conditions as to the relative lengths of the pectorals in the corrected shoulder position and in the arm-up-stretch position, and that freedom

from excessive muscle pull in the corrected back position is thus insured. It will be seen, also, that the pectoralis minor averages 1.3 cm. longer in the up position of the arm owing to the associated raising of the shoulders, and therefore is also not liable to be tight when the shoulder is put into corrected backward position. The clinical study of the condition of the pectoral muscles is shown in Table IV.

TABLE IV.
CONDITION OF PECTORAL MUSCLES IN ROUND SHOULDER
AND NORMAL CASES.

| | Pectorals. | |
|--|--------------|-------|
| | Normal | Short |
| I. Resistant Cases (38), 8 to 15 yrs., girls and boys, | 35 (92%) | 3 (7) |
| II. Voluntary correcting (18), 8 to 15 yrs., girls and boys, | 18 (100%) | 0 |
| III. Gymnasium Students (38), Normal class, 18 to 35 yrs., women | 38 (100%) | 0 |

The test of the condition of the pectoral was made by putting the shoulder into the corrected posture, taking pains to avoid voluntary contraction of the muscle, and then testing the elasticity by pressing with the thumb upon the muscle as it passed from the trunk to the arm. Repeated attempts were made with some of the cases before a satisfactory test could be secured, owing to the subject's inability to control the voluntary contraction. In most cases it was necessary to secure the corrected position passively by pressure upon the shoulder, since, when the subject voluntarily put the shoulder back, the pectoral was contracted thus giving deceptive results.

frequently to so much voluntary contraction of the muscles as to make the results extremely unreliable. The estimation of elasticity by the sense of touch enables one immediately to recognize contraction of the muscle while making the test and thus tends to eliminate error; at the same time it is quick and satisfactory since a little practice gives considerable accuracy of judgment.

The elasticity exhibited by the uncontracted shoulder muscles of normal living subjects, when the shoulders were forced back to a position of full extension, was taken as normal tonicity. Under similar circumstances when, in any case with a history of poor posture and with apparent resistance to shoulder extension, there was markedly increased tension in any of the forward acting shoulder muscles, it was assumed that such muscles were "short," i. e., that such use as they had received had not fully developed them in length of muscle fibers or tendon filaments or both, or in elastic stretch of the muscular substance.

The term short as applied to these muscles is certainly in many cases more appropriate than the term hypertonic² which has been used to describe a similar condition, for the reason that these muscles when stretched only their habitual amount are of normal tonicity, but when further stretched their elastic resistance increases much more sharply than in a normal muscle. This suggests that the elastic limit of the muscle is being rapidly approached.

That muscles do become shortened and resist stretching to their former length and yet show no increase of tonicity is shown in cases in which one set of muscles becomes paralyzed while the antagonists retain their power. After a time the non-paralyzed muscles become short, thick and resistant to stretching as in paralytic club foot, but the tonicity is usually found not to be greater.

These facts suggest that normal elasticity is developed and maintained in any muscle by the stretching which its antagonists give it. On the other hand, the tonic contraction is somewhat increased by the strengthening of a muscle through its physiological activity without in any way shortening the muscle or making it more than proportionally resistant to a stretching force.³

It will be seen that in only three cases of the most resistant type was tightness of pectorals discovered. In these cases, moreover, it was merely a slight suggestion of tightness, not nearly so marked as the tightness of the serratus in some cases which were not considered worthy of record. That pectoral tightness finds any record in this study is due to the fact that the emphasis laid upon it as a factor in round shoulders in orthopedic literature made it eagerly sought.



FIG. 4. Average natural positions of shoulders and average angular ranges of shoulder movement in a vertical plane upward and downward for groups: I, corrected children; II, normal children; III, normal adults. I, Natural position; I, upward, and I, downward.

In all cases the shoulders were pushed back to an extreme corrected position after preliminary manipulation to free the muscles from voluntary contraction. The amount of elasticity in each muscle was then determined by estimating the amount of force necessary to deflect the muscle when applied at right angles to the course of its fibers.

At first it was thought advisable to determine this elastic resistance quantitatively by means of a special dynamometer, but in experiments it was found that the use of any instrument led

² The term hypertonicity applied preferentially to cases in which there is little or no increase in the length of the muscle and in which the resistance to stretching is increased. The term short is applied to cases in which the length of the muscle is increased and the resistance to stretching is also increased.

It is not impossible that the bad reputation of the pectorals has been due to the fact that it is difficult to eliminate voluntary contraction especially since the test is ordinarily made with the arms raised, which, as I have shown, is faulty technique since it stretches the muscles about three inches more than the corrected posture.

The Serratus.—In marked contrast to the negative influence of the pectorals, I found in all of the dissection subjects a distinct recoil from the backward movement of the shoulder when the pectorals were cut away and the serratus alone of the forward acting muscles remained. This elastic resistance wholly disappeared when the serratus was cut, leaving only in certain of the cases a rigid resistance which was readily recognized.

The serratus was tested clinically by having the subject stand with one shoulder against the wall. The opposite shoulder was then pressed backward, downward and inward and at the same time shaken slightly to free it from voluntary muscular control. The fingers of one hand (the right when the left serratus was tested) were slipped under the lower angle of the scapula to a distance of one and one-half to two inches. The fingers were then drawn sidewise outward from under the angle of the scapula, so as to get the serratus muscle between the fingers and thumb freed from tissues other than the skin. It was thus easily possible in all cases directly to test the elastic resistance and the development of the muscle. When normal it could be easily raised from the chest and its elasticity measured by the muscular effort required. When short, the fibers of the muscle could be definitely recognized as tense bands and the degree of increased elasticity gauged.

TABLE V.

CONDITION OF SERRATUS MAGNUS IN ROUND SHOULDER AND NORMAL CASES.

| | Serratus: | |
|---|-------------|-------------|
| | Normal. | Short. |
| I. Resistant cases (38), 8 to 15 yrs., boys and girls, | 6 (16%) | 22 (84%) |
| II. Voluntarily correcting (18), 8 to 15 yrs., boys and girls, | 9 (50%) | 9 (50%) |
| III. Gymnasium students (38), Normal case, 18 to 35 yrs., women | 25 (66%) | 13 (34%) |

Table V shows how frequently a short serratus is found not only in resistant forward shoulder cases, but in those classed as correcting or postural, as well as in those ordinarily considered normal cases. The serratus, therefore, must be considered as the most important factor in forward shoulders. This is more fully realized when we consider that the insertion of the serratus upon the posterior border, and especially at the lower angle of the scapula, gives it a very powerful leverage effect upon the shoulder positions, since the muscular fibers act directly without having their force lessened by leverage reduction, such as exists for most of the skeletal muscles. In all forward exercise of the arms, the serratus is called into play to assist in supporting the weight of the arm as well as in

thrusting and lifting, and it is, therefore, well developed in all individuals of normal activity.

The chief antagonists to the serratus, the rhomboids and the trapezius, are, as a rule, sadly underdeveloped in these cases. This is natural inasmuch as the ordinary activity of civilized life not only fails to call them into active contraction but is constantly stretching them and thus stimulating them to greater adaptive growth in length. The obvious result is seen in the tendency for the shoulders to come to rest at the point of balanced elastic pull between these antagonists with great advantage in favor of the serratus since the weight of the arm and shoulders markedly aid it. This means, of course, a forward shoulder with short, strong serratus and long, weak rhomboids and trapezius. Naturally, when a child by an effort brings the shoulder to the correct posture, he is unable to maintain it owing to the rapid fatigue of these weak muscles, which are pitted against the tonicity and elasticity of the relatively well developed short serratus and the weight of arm and shoulder.

In cases with markedly shortened serratus, the lower angle of the scapula is rotated strongly outward. This outward rotation was found to be so uniformly associated with the condition of shortened serratus as to lead one to recognize it as a diagnostic sign. When the posterior borders of the scapulae were parallel to the spine, the serrati were usually found to be normal.

Since the bulk of the serratus muscle lies exposed to manipulation, it is possible to apply stretching force directly to it, if deemed desirable. It should also be possible in case of its inveterate shortening to incise the muscle or to partially free it from its scapular attachment. I have, however, as yet seen no case in which this could be considered justifiable. The shortened muscle can be easily stretched by the ordinary orthopedic methods, especially by the use of a proper brace or plaster jacket to include the shoulders and efficiently to hold them in corrected position.

The tightness of the serratus cannot be considered as a true hypertonicity, since it is due merely to the adaptive shortening of the muscle to fit the use demanded of it and not to any over-stimulation. When, therefore, the individual voluntarily attempts to stretch the muscle beyond its usual range by contraction of the rhomboids and trapezius, its elasticity is deficient and the normal physiological relaxation which should come when antagonists act is without effect; self cure, therefore, is difficult if not impossible. It is apparently for this reason that free-hand exercises, such as those given by the Germans and Swedes in their setting-up drills, are so frequently without effect in cases where the serratus is more than slightly shortened. The most effective exercises are those which involve the backward stretching of the shoulders with the arms down, such as some of the exercises with wands, and especially those with chest weights and rowing machines used with the subject facing the apparatus and making

his movements in the horizontal and lower, rather than in the upper, planes. Hanging by the hands has no effect upon the serratus since it is relaxed in that position; in fact, in forward shoulder cases it is almost wholly useless since the pectorals do not need stretching and no tissues which do need it are stretched thereby.

Rhomboids and Trapezii.—Owing to the habitual forward position of the shoulders these muscles in their growth become adapted in length to their stretched condition. This adaptation is an important factor in the cure of forward shoulders since it is necessary for the muscles to hold the shoulders back in correct position by constant effort against the increased pull of the elasticity of the serratus and also to support a part of the weight of the arm and shoulder in order to neutralize the tendency of the shoulder to slide forward. This work the muscles are called upon to do at a great disadvantage since their adaptive lengthening has made it necessary for them to contract through a greater proportional range than normal, and yet this range of contraction is required of them if they are to bring the shoulders fully back to the correct posture.

Even in moderate cases of habitual forward shoulders, I am convinced that this factor is in part responsible for the apparent hopelessness of getting children to hold their shoulders back.

On the other hand, the habit of allowing the shoulders to droop without muscular support is, of course, a habit of laziness on the part of the nerve centers having charge of the subconscious control of shoulder attitude. These centers have been trained to shirk their work and this habit is in most cases extremely inveterate.

The cure of this shoulder habit thus has two phases; first, shortening and strengthening the muscles which hold the shoulders back; and, second, training the nerve centers to do the continuous work of stimulating the muscles in order to hold them there. To shorten the muscles we must provide the conditions for adaptive growth in them. This necessitates that we keep the shoulder in corrected posture long enough for the change to take place in the muscles and prevent at the same time any stretching which might tend to prevent or retard the change. To strengthen them the muscles must be exercised in the shortened state up to the physiological limit of strength and endurance that the shortening process may be hastened thereby. The training of the nerve control may be accomplished later if necessary by the application of a device which will cause discomfort when the shoulders are allowed to droop.

Of course in practice the method of holding the shoulders by brace or jacket for the stretching of the serratus relaxes the rhomboids so that no special procedure is made necessary.

The Coraco-Clavicular and Acromio-Clavicular Ligaments.—After severing the muscles connecting the shoulders with the trunk, it was found in many subjects that there was a rigid resistance to the full backward movement of the

shoulders. When the coraco-clavicular ligament was cut, this resistance ceased, and the shoulder could be carried backward far enough to bring the clavicle against the first rib, or the scapula to the spine, and to lift the posterior border of the scapula several inches away from the ribs. The shoulder also could be pressed downward much more freely. This was especially marked in a number of cases with high shoulders.

There was found to be considerable variation in the length of both the coraco-clavicular and the acromio-clavicular ligaments, the former varying in functional length, as determined by the amount of motion between the parts, from 1 mm. to 8 mm.; the latter, from 0 to 5 mm. In some cases where one of these ligaments was short, the other was correspondingly loose, thus insuring mobility of the shoulder.

These two ligaments tie the clavicle and scapula together more or less tightly at two points distant from each other about 1 cm. As they are very strong and as the total length of the clavicle is only about four times and the scapula five times that distance, it can readily be seen that when both ligaments are tight the clavicle and scapula together form a fairly rigid unit and thereby become incapable of adjustment to the sloping chest wall as it enlarges downward. As a result there is mechanical interference with the movements of the shoulders in practically all directions, since there is a tendency to throw the posterior scapula border against the ribs in a downward movement, and to lift the scapula bodily from the ribs in a forward and especially in an upward movement.

The coraco-clavicular ligament can be directly measured as to functional length as follows. Raise the shoulder to its limit (arm down) thereby causing the coracoid to be pressed closely against the under surface of the clavicle, and measure the distance from the upper surface of the clavicle to the upper surface of the process. Then depress the shoulder as far as possible, thus separating the coracoid process from the clavicle as far as the coraco-clavicular ligament will permit, and again measure the corresponding distance. The ligament is thus put on stretch and its functional length for this motion is the difference between the two measurements taken.

See Figs. 5 and 6. In certain cases it is necessary to have the shoulder forward in this manipulation in order to have the clavicle clear the first rib in the downward position.

It is also possible to determine the length of the coraco-clavicular ligament by lifting the angle of the scapula away from the chest in the plane passing through the two ligaments. This special manipulation is, however, uncertain unless very carefully performed owing to muscular interference.

The acromio-clavicular ligament can be measured for lateral flexibility by grasping the outer end of the clavicle between the thumb and finger of one hand and the corresponding acromion process with the other hand. In the absence of muscular interference, the two may

be made to move independently so far as the ligament will permit and this motion can be easily estimated in millimeters.

TABLE VI.

FUNCTIONAL LENGTHS OF THE CORACO-CLAVICULAR AND ACROMIO-CLAVICULAR LIGAMENTS.

| | Coraco-Clav. | | | Acromio-Clav. | | |
|-------|--------------|------|------|---------------|------|------|
| | I | II | III | I | II | III |
| 8 mm. | | | | | | |
| 7 mm. | 2 | | 1 | | | |
| 6 mm. | 7 | 3 | 6 | 2 | | |
| 5 mm. | 12 | 5 | 8 | 5 | 7 | 6 |
| 4 mm. | 9 | 5 | 19 | 12 | 7 | 7 |
| 3 mm. | 6 | 5 | 6 | 10 | 3 | 12 |
| 2 mm. | 1 | | | 8 | 1 | 3 |
| 1 mm. | 1 | | | 1 | | 9 |
| | (38) | (18) | (40) | (38) | (18) | (37) |

I, Resistant cases; II, voluntarily correcting; III, gymnasium students.

In Table VI is given the results of these measurements in a form to show the distribution of the cases in relation to the lengths of the respective ligaments. These figures suggest a fairly satisfactory curve of distribution for the coraco-clavicular ligament in all classes except possibly Class II. For the forward shoulder children the apex of the distribution curve for the coraco-clavicular ligament is at approximately 5 mm.;



for the adult cases, at 4 mm. The acromio-clavicular curve has its apex in the corresponding cases at about 3.75 mm. and about 3 mm. These lengths give very fair movement between clavicle and scapula and permit free shoulder movements so far as the ligaments are concerned provided both are loose.

Those cases in which the length of the coraco-clavicular ligament is less than 3 mm. must be considered as defective in development of length of ligament, probably through insufficient stretching by activity during growth. The cases in which the length of the acromio-clavicular ligament is less than 2.5 mm. fall under the same head.

In studying the movements of the shoulders, it was found that the coracoid process projected

farther forward under the clavicle when the shoulder was forward, showing that the angle between the plane of the scapula and a corresponding plane of the clavicle had become less, as shown in the accompanying photographs of the dissected shoulder. Figs. 7 and 8.



TABLE VII.

APPARENT INCREASE OF LENGTH OF CORACOID PROCESS WHEN SHOULDER SWINGS TO FORWARD POSITION FROM BACK POSITION.

| | I | II | III |
|--------|------|------|------|
| 11 mm. | 1 | | |
| 10 mm. | 3 | | |
| 9 mm. | 2 | | 1 |
| 8 mm. | 2 | | 1 |
| 7 mm. | 2 | 2 | 5 |
| 6 mm. | 3 | 1 | 5 |
| 5 mm. | 9 | 4 | 8 |
| 4 mm. | 6 | 3 | 11 |
| 3 mm. | 4 | 4 | 5 |
| 2 mm. | 4 | 2 | 2 |
| 1 mm. | 2 | 1 | |
| | (38) | (17) | (38) |

I, Resistant cases; II, voluntarily correcting; III, gymnasium students.

In Table VII is given the measurements of this increase of length of the coracoid process as the shoulder moves forward.

The deformity usually associated with a very short coraco-clavicular ligament, high forward shoulders, is so disfiguring and so resistant to ordinary treatment as to demand extraordinary measures for relief. Two such cases had been in the Curvature Clinic at the Boston Children's Hospital for a considerable time without continued improvement. They both presented typical pictures of the coracoid process bound tightly to the clavicle with short serratus. Many operations on the cadaver had convinced me that it was perfectly possible to tenotomize the coraco-clavicular ligament and thereby free the scapula from its rigid attachment to the clavicle. For the operation⁴ I devised a double-edged knife with the blade curved so that the flat side of the knife would follow the upper surface of the coracoid process to the point of the attachment of the ligament. The cutting edge of the knife was directly in line with the handle, thus making it possible to apply considerable force without developing a tendency to rotation in the knife. This knife was introduced sub-cutaneously fol-

⁴This was made possible through the cordial cooperation of Dr. E. H. Bradford and Dr. F. G. Brackett of the staff of the Children's Hospital, for which I desire hereby to express grateful appreciation.

lowing the upper surface of the coracoid process until the resistance of the ligament was felt. By cutting carefully close to the coracoid surface, the ligament was severed at its smallest section, and the slightest ligamentous remains were



discovered by the resistance offered, and easily cut. This was facilitated by downward pressure upon the shoulder which made the ligament tense, and it was possible to determine the complete separation of the ligament by the yielding of the scapula when the angle was lifted from the ribs.

It was found necessary also to cut the sub-clavicular fascia which is attached upon the inner side of the coracoid process not far from its tip and therefore easily reached sub-cutaneously through the same opening.

There was almost no hemorrhage associated with the operation, and practically no after effect in the way of pain or disability. Twenty-four hours later it was possible to apply corrective braces and to push the stretching of the serratus vigorously.

The result of the operation was most satisfactory in the case of one of the patients, a girl of fourteen years, with high hunched forward shoulders. In the second case, a boy of ten who had had asthma for many years and who had an even greater deformity, the result was good, although some effect was lost through the boy's hyper-sensitiveness and the continuance of the asthmatic attacks which made him somewhat intolerant of treatment after the operation.

Although this operation is simple and the result most excellent, it is important to select one's cases by testing under etherization since one must be sure that the coracoclavicular ligament is actually short and not made to appear short through muscular contraction.

Clavicle — In a few cases of resistant forward shoulder, the clavicle comes to rest on the first rib and thus prevents full correction. If the

shoulders are forcibly corrected, the sternal ends of the clavicles are pried out from their articulations and become markedly prominent. This should always be looked out for in the routine examination for the reason that it may not be wise to push the stretching very vigorously, inasmuch as the main result may be the loosening of the sterno-clavicular joints.

A certain amount of stretching of these joints, however, is undoubtedly justifiable in a case of marked forward shoulders with the clavicle resting on the rib since in no other way without operation is correction possible.

The reason for this interference seems to be that the S curves of the clavicles are exaggerated especially at the outer ends and, therefore, throw the shoulder forward and at the same time narrow the shoulder breadth.

This deformity is found most frequently in children who have or have had rickets, but it also appears in cases with no signs and with nothing in their histories which makes rickets even probable. It is not at all impossible that an infant habitually put to sleep on its side with the shoulder under it taking the weight of the upper part of the trunk will thus acquire a shortened clavicle with deeper curves, even if there is no special softness of bone other than that which is normal during infancy and early childhood. It would be simply another instance of the adaptive growth of bone which plays so large a part in deformity.

The rational treatment of this condition of the clavicle is either to cause a green stick fracture at the outer third in such a way as to straighten it or to saw it through subperiosteally and retain it in straight position until solid.



One case which Dr. F. G. Brackett very kindly operated in this way at my suggestion in 1904 in the Boston Children's Hospital gave a very good final result in spite of the difficulty of maintaining simultaneously the necessary fixation and correction.

It is important in ordinary fracture of the clavicle to look after the shoulder position so as to avoid its coming forward and thus producing a resistant forward shoulder from interference

with the first rib. Fortunately, this is not a frequent complication in the routine treatment of forward shoulders.

TABLE VIII.

CORRELATION OF LENGTHS OF CORACO-CLAVICULAR LIGAMENT WITH THE AVERAGES OF OTHER SHOULDER MEASUREMENTS IN RESISTANT CASES.

| Length Range of Shoul- der of Cora-der. Movement of co-Clav. For. Upward. Coracoid Lig. mm. | Move- ment of Process. | Expansion of Chest, Depth. | Girth. | Length of Acromio Clav. Liga- ment. |
|--|------------------------------|-------------------------------|--------|--|
| 7 (3) | 37° | 40° | 5 mm. | 3 cm. |
| 6 (5) | 41° | 48° | 4 | 12. |
| 5 (13) | 44° | 45° | 6.2 | 4 |
| 4 (7) | 49° | 50° | 4.1 | 4.6 |
| 3 (8) | 31° | 45° | 3 | 3.5 |
| 2 (1) | 30° | 35° | 6 | 2 |
| 1 (1) | 40° | 30° | 0 | 3 |
| (38) | | | | 5 |
| | | | | 1 |

In Table VIII is given the correlation of lengths of the coraco-clavicular ligament with the averages of other shoulder measurements. These show very distinctly that there is practically no correlation of any marked degree between any of the different elements of possible constriction in the shoulders, a fact which accounts for the complexity of the problems connected with shoulder resistance. This emphasizes the fact which is apparent to any one making a careful study of shoulder conditions that each factor must be individually studied and all superficial generalization avoided. For this reason it is important that we should adopt a different nomenclature for these cases, and in our records eliminate the term round shoulders, substituting for this a definite statement as to the limitation of shoulder movements and the localization of the limiting cause.

Treatment.—The treatment of resistant forward shoulder cases after a careful examination and localization of the difficulty becomes a comparatively simple mechanical proposition. Its practical execution, however, may try both the patience and skill of the surgeon. Relatively few cases fall into the class of tight ligaments which permit of the above described operative treatment, and even in these the success of the treatment depends quite as much upon the after care as upon the operation.

In all cases, therefore, it is necessary to carry out with consistent detail the following plan of treatment:

The serratus, which is tight in all cases whether the ligaments are tight or not, and is especially tight when the ligaments are short, must be stretched in order to get an adaptive lengthening of the muscle which will permit the self-maintenance of the correct posture without undue fatigue. To accomplish this, an ordinary spring back brace with rigid or flexible loop to include the shoulder and to carry it steadily backward as strongly as can be tolerated by the subject, is efficient for mild cases, especially during periods of rapid growth.

In severe types with rigid resistance, more can be gained by means of a plaster jacket applied in such a way as to include the strongly corrected

shoulders. Several broad pieces of thick felt are put behind the shoulders, and the plaster is arched over the top of the shoulder so as to give an absolutely firm support.⁵ From time to time, at intervals of several days, or preferably even a week, the pieces of felt are removed one by one from behind the shoulder, and wedged in front, in order to throw the shoulder back into the space left by the removed pad. This procedure should not be hurried. It is probably wiser to allow an interval of a week between the changing of the pads, in order to permit the necessary adjustment to take place in the stretched tissues. If the treatment is pushed too rapidly, the shortening is much more liable to recur. The jacket should be continued, if possible, for at least two weeks after the last pad has been placed in front of the shoulder, in order thoroughly to establish the changes in the muscle. One should guard carefully against causing pain or such pressure as will produce numbness or paralysis of the arm.

After the use of one jacket for from four to eight weeks, one can usually depend upon a light retention brace worn for a few hours each day, provided that the serratus is vigorously stretched daily and the shoulder not allowed to droop forward.

Accompanying the treatment by the jacket and pushed strongly on its removal, there should be vigorous development of the rhomboids and the trapezius by means of exercises with chest weights or Whitely exerciser, dumb bells, or such other means as are at hand, in order to avoid the weakness of muscle consequent upon the confinement of the jacket and to increase the strength of the dorsal muscles that they may be enabled to oppose the tendency of the serratus to recontract when no longer opposed by jacket or brace.

No time limit can be set for a cure since there are a number of intangible factors which may control the result in any given case and so cause wide variation in duration of treatment.

If a case can be absolutely controlled, four to six weeks should be sufficient for the main treatment of a severe inveterate forward shoulder, provided there is neither hyper-sensitiveness nor asthma present. Such cases should be under close observation and adequate after-treatment for at least six months longer.

The deformity is serious in its reflex moral effect and it is important that it should not be ignored or left to be outgrown, as is so frequently done. Postural forward shoulders undoubtedly are outgrown since it is dependent chiefly on the laziness of the nerve control. Resistant cases, so far as my observation goes, do not markedly improve without vigorous treatment since self-cure is practically impossible.

CONCLUSIONS.

1. Resistant forward shoulders are symptomatic of anatomical conditions.
2. The commonly accepted statement that tight pectoral muscles are the cause is not tenable.

⁵ A device first applied, so far as known to the writer, two years ago by Dr. R. W. Lovett in the Curvature Clinic, Children's Hospital.

3. The most common factor in forward shoulders is the tightness of the serratus muscle.

4. An occasional factor usually associated in extreme cases with the above is shortness of the coraco-clavicular and acromio-clavicular ligaments whereby the union of clavicle and scapula is made so rigid as to prevent full backward and downward movements of the shoulder.

5. Systematic examination of forward shoulder cases is necessary in order to identify the definite causes of restriction of motion.

6. The early recognition and treatment of pronounced cases is important since self-correction is unusual and the reflex moral effect is serious.

7. When stretching and muscular development fail, it is possible to incise tight coraco-clavicular ligaments, and thus free the shoulder from rigid interference.

8. The term "round shoulders" is misleading. Forward shoulders (postural or resistant) is far more definite, but should be accompanied by a definite statement of the cause of resistance.

A CONSIDERATION OF THE TREATMENT OF AUTO-INTOXICATION OR AUTO-INFECTION WHEN THEY ARE THE CAUSE OF MENTAL DISTURBANCE.

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ABOUT A year ago, I published in the BOSTON MEDICAL AND SURGICAL JOURNAL, a paper entitled, "A Consideration of Auto-Intoxication, and Auto-Infection as Causes of Various Mental Diseases." I then found that if I went into the treatment of such cases the paper would be far too long for a medical journal; as it was, it had to be cut in halves and published in two issues, Jan. 5 and Jan. 12, 1905. I considered that nothing would be lost in delaying publication for several months, as I could give a more satisfactory account of the outcome of certain cases which I then had under treatment. Again I find my paper beyond the length I had anticipated. I have, therefore, cut out all my melancholia cases, those being more easily demonstrated as directly due to auto-intoxication, and treatment along these lines is usually beneficial or curative. Later I intend to publish a paper on "Melancholia" which will include what I have cut out of this paper and the results, if possible, of several cases now under observation and treatment.

When I wrote my last article, few alienists were adherents to the theory of auto-intoxication, but during the past year, most of the prominent alienists of this country and especially abroad have become deeply interested in the subject. The consensus of their opinion seems to point to the fact that there is an auto-intoxication in most cases of mental disorders, although some prominent members of the profession still cling to the old idea that it is merely a symptom or effect, rather than a cause. When we have our hospital for observation in mental disorders in

their early stages (which is bound to come soon), it can then be more easily demonstrated that auto-intoxication is the beginning of many mental disorders, and this being corrected, the mind clears up and the symptoms disappear.

This is what we find in our private practice among those cases which come early enough to us, and such has been my experience in the Mental Clinic of the Boston Dispensary among many cases that find their way there during the early stages of mental disturbance. In the large institutions, and the insane asylums where patients are not admitted as a rule until their disorders have advanced far enough to require commitment, the early stages are so far remote that it is difficult for the men in charge of these institutions to recognize self-poisoning as a cause. Credit must be given to a goodly number of medical superintendents of insane institutions for having recently taken up this subject, who have not before seriously considered it. Many are to-day treating insanity, so-called, along these lines without knowing it or even admitting it to themselves.

Pathologists, ever fighting among themselves, all want to find the specific germ or toxin which causes the alienation of the mind. Ford-Robertson and Bruce (of whom Clouston told me that if he had not done anything else in this world he should feel fully satisfied to have discovered them) both claim to have isolated the bacilli in certain mental cases. Ford-Robertson showed me in his laboratory in Edinburgh, bacilli of general paralysis as he has found them in the lungs, in the urethra, throat and the spine of general paralytics. Dr. Lewis Bruce showed me in his laboratory at the Mutilley Asylum, Perth, Scotland, the bacilli that he has isolated in katatonias, also the bacilli he has isolated in cases of acute mania.

It is early to say much about these germs, but because some other pathologist has not found them does not prove anything. The fact that alienists treat cases of mental disorder in an antiseptic way and for auto-intoxication (or as Maudsley told me he preferred my paper to read, "self poisoning") and get results more quickly and permanently than in any other way makes the man who studies cases theoretically believe that he has hit the nail on the head. After successful treatment shall he stop treating cases with antiseptics because the pathologist has not found the particular toxin which causes the trouble? I should say not, but on the other hand he should continue treating the cases theoretically, not as to a toxin, and ask the pathologist to continue his research and prove why treating cases for auto-intoxication (or self poisoning) in their early stages or treaty benefits or cures them in their later stages.

In typhoid fever and in diphtheria, attempts to stimulate the heart and other organs to combat the poison. In cases of snake bites, there is about the only remedy we know that will enable the patient to throw off the poison. So chemical

disease, nux vomica, strychnine, gentian and other tonics are given to build up the patient and put him in condition to resist the poison while the antiseptics are killing the poison itself. This is the answer to many physicians who say, "You give antiseptics but you also give tonic; how do you know the tonic is not doing the work?"

There is no proof to-day that toxins, which are the cause of mental alienation, do not exist in the system. If there were proof, it would not be necessary for the most skilled pathologists of to-day to give so much time and thought to the discovery of toxins which they really in their hearts believe exists, and — what we alienists prove to them in a therapeutic way — do exist. We shall welcome the day when they discover either the bacilli or the toxins of the different mental diseases; and we depend upon them to do so and to give us some serums which we can inject into our patients and relieve them of some of the most distressing maladies mankind is subject to.

I have not the slightest doubt in my mind that in a very short time such discoveries will be made by the pathologists who are now so strenuously working on this subject.

From my notes I give ten cases just as they come which have been treated with antiseptics, some showing improvement; others no improvement; others cures, if there is such a thing as curing an ill of the human body not made immune, for, of course, the condition that brought about self-poisoning once may occur again if the patient is careless enough not to observe the general laws of health and surroundings which are necessary to his individual temperament or capacity. I have also given the treatment for auto-intoxication as carried out by some of the most prominent alienists of our time. Instead of giving the general treatment of the disease with references at the end, which is so common in most of the medical papers now written, I have given the authorities with their quotations, in the body of the paper.

In a general way, the antiseptics that I have used in the following and in other cases have been glyco-thymoline,¹ borolyptol,² betanaphthol, phosphate of sodium, benzoate of sodium, guaiacol, quinine, strychnine, nux vomica, creasote, naphthalin, calomel, salicylate of soda, peppermint, checkerberry, salol, bicarbonate of soda and antiseptic tablets put up by manufacturing chemists.

For treatment, colonic flushing or high enemas of normal salt solution, washing out of the stomach or lavage, salt baths, sweat baths, hydrotherapy, hot and cold packs. Diet, where the above remedies do not correct the fermentative processes at once, but a generous diet should be given as soon as evidences of fermentation from the bowels or stomach have disappeared. Milk or peptonized milk should alone be given at

first, gradually the whites of eggs may be added with possibly a little coffee, then the malted milks, grammes, Mellin's Food and egg-nogs, and finally solids until full diet is established, always avoiding the usual harmful foods like pastry, fried things, sweets, pickles, etc., until a year after the patient's improvement.

I give below a few of my cases, which were diagnosed as due to auto-intoxication, taking them in the order they came to me:

CASE I. In the summer of 1901, I treated F. B. Female. Age, twenty-two. Rather unfavorable heredity influences. Tendency to over work, especially in her music, practising hours beyond her normal capacity. Perplexity over a love affair, and worry and friction in her family. Becoming exhausted, her metabolism was disturbed, and she began secreting toxins. Her ideas became warped, also her judgment. Felt that she had done wrong, that she was not good enough to marry, etc. Her digestion became upset and her mother found that a milk diet made her bilious, but that lamb and chicken broth agreed with her. Breath became very foul. She grew worse, and was taken to a New Hampshire hospital with *acute mania*. Mercier, in his textbook of insanity on page 139, says that disorders of digestion are frequent in acute insanity, and "In any case in which it is ascertainably present, it must be treated. There are crises in which the contents of the stomach undergo putrefactive or fermentative changes which render them unspeakably foul and offensive, and when this is the case, or whenever the breath is very foul or especially when foul gases are expressed from the esophageal tube when the end reaches the stomach, benefit will be derived from washing out the stomach at regular intervals."

Her motor excitement at the New Hampshire hospital was so great that she could not be kept in bed without restraint, and she was covered with bruises where she had fallen from her cot and otherwise injured herself. When I first saw her, she could not stand on her feet, but sank to the ground and had to be carried to her room. Temperature and pulse were raised. There had been excessive waste of tissue and energy. She raved but her voice was inaudible most of the time, probably from exhaustion. Occasionally her remarks could be understood and were about horses riding over her and other unpleasant ideas which she had. Her mouth was dry; sordes had accumulated on teeth and gums. Eyes rolled up and back all the time. She took nourishment only in liquid form which when placed in her mouth caused her to swallow spasmodically. The physician who accompanied her said he did not consider she could live another twenty-four hours when she left the general hospital in New Hampshire.

In old times these acute cases of mania were called brain fever and their movements restrained which exhausted them, and if they survived at all, they usually became hopeless dementes.

I gave the patient a warm pack, then spread some blankets on the floor and allowed her to twist and roll over the room as she would, two nurses being in constant attendance to care for her, and see that she did not harm herself. Treatment: She was started on hyoscine hydrobromate 1-200 and calomel in $\frac{1}{2}$ gr. doses. Realizing the seriousness of the case, I called Dr. C. F. Folsom in consultation. He advised giving glyco-thymoline $\frac{1}{2}$ dr. t.i.d. as an antiseptic, saying he thought antiseptics proved very beneficial in such cases. I have never ceased to be grateful to him for

¹The formula of glyco-thymoline contains: benzo-salicyl sod., eucalyptol, thymol, salicylate of methyl from betula lenta, pini pulmonis, glycerin and solvent.

²The formula of borolyptol contains: gum myrrh, benzoin and storax, eucalyptol, pinus pumilio, boric acid, glycerin and solvent.

giving me this advice. He opened my eyes, and much of my success in mental medicine I certainly owe to the advice which he gave me at that consultation. Glyco-thymoline was given and as the symptoms demanded, sulfonal in 10 gr. doses; Fowler's solution in 3 minim. doses; strychnine 1-600 gr. t.i.d.; cascara; digitalis, etc. But from my experience since then I consider the girl's life, or mental stability, at least, was saved by the general antiseptics.

She gradually improved and recovered. In October, 1901, she was able to write a very good letter to a friend. On Nov. 5, 1902, she announced her engagement to a most estimable young man, the same one whom she thought she was not good enough to marry when she was ill. On March 8, 1904, the young man wrote me, "Miss B. is so well and strong that I am eager to greet one who was the instrument of her return to life."

Feb. 1, 1906, patient remains well. Has had one child without any mental disturbance during gestation, delivery or since. Time enough, seems to me, to have elapsed to consider this case as recovered.

CASE II. Also during the summer of 1901, Mrs. W. B. S. Female. Widow. Age, sixty. Has always been in the habit of taking a great deal of medicine and drugs, and was taking a large amount of morphine when first seen. Had hallucinations of sight and hearing. Thought that Newfoundland dogs were in her room; that windows with people looking through them were in the sides of the solid wall. Constantly trying to get out of the room to go to some children whom she thought she heard playing outside. Breath very offensive. Pulse and temperature elevated. Reflexes exaggerated. Constipated. Skin sallow, dirty looking.

Treatment: Stopped morphine and all other medicines which she had been taking. Gave calomel in 1 gr. tablets. Strychnine 1-600th t.i.d.; glyco-thymoline t.i.d. Also gave, as symptoms demanded, bromide; aromatic spirits of ammonia; paraldehyde, for insomnia; guarana, for headache; tannin, for diarrhea.

Patient gradually improved, and in the fall of 1901, was able to go to drive. In the spring of 1902, went to Europe where she got on very well, and up to the last that I have heard from this patient there has been no return of hallucinations or delusions, the latter of which were mainly about her husband. At last accounts she was traveling with a companion and enjoying life. I should consider this case also as recovered.

CASE III. Jan. 29, 1902, J. B. W. Male. Age twenty-five years. Worked in wholesale millinery store. Mother fifty-two years, living. Father died at fifty-four of accident, and was always a drinking man. Sister died of nervous trouble at twenty-five. Brother died of consumption at twenty-eight and was delicate and nervous, and "things proved upon his mind." Maternal uncle and aunt and their daughters died of consumption. Patient had usual children's diseases. Never drank or smoked.

Occasionally has nightmare, but never walks in sleep. Last June while calling on friends in the evening he felt what he calls his "first spell," felt he must go out or fly, was terribly excited, felt if he did not run or jump he might faint. Later had other attacks. Woke up early in the morning and worries much about his "self." Head feels badly. Weight 141 lbs.

Treatment: Prescribed glyco-thymoline 50, t.i.d., in water with meals. 1-600 strychnine after meals. Liquid peppercorns between meals.

Feb. 15, patient says the old troubles have all left him; he has regained confidence in himself and feels well. This is certainly a case of decided improvement.

CASE IV. Sept. 5, 1902, I. B. T. Male. Age thirty-four years. Of a neurotic family. Patient has always been delicate and over-sensitive. Lost his

father two years ago, since which time he has been morose and rather avoided his friends. Has had a recent disappointment in love. Is worried about the small details of his financial affairs although he is unable to spend one tenth of his income. Was referred to me by Dr. F. I. Proctor. Has also been seen by prominent mental specialists who considered the case one of dementia precox.

I found the patient in his room, which was darkened, sitting cross-legged on the bed, partly dressed, and eating food from a plate with his fingers. Would go out of the room once a day, possibly for a little walk, behind the house and away from people; this was all the exercise he would take, and this not regularly, not wishing to leave the room even for the toilet. Does not wish to talk to anyone. Sighs deeply; scowls, and all the lines of his face are deep. Pulls hairs out of his eyebrows one by one and also from the top of his head. History indicates that he has avoided people for some time prior to his father's death.

For some years has had a good deal of stomach trouble and headache. Is a graduate of Harvard. Of late years has dressed poorly, some of his clothes being really shabby. Is self-centered and of a secretive disposition. A hard worker. Has a constant feeling that if you want a thing well done you must do it yourself. This has caused him to work more than his capacity warranted. Pupils react normally. Right knee jerk diminished. Left normal. Romberg position impossible. Coordination poor.

Clouston says, "There should be no power of the higher center compelling the lower center to do more than it is fitted for." Carlyle compelled himself to do more work than he was inclined to do. This is a dangerous thing with a neurotic temperament, or for one who is over-conscientious. This patient had suicidal tendencies once or twice. Skin is dry and cold; does not perspire. Reaction is not good. Sleep not refreshing and occupied with unpleasant dreams. There has been loss of weight.

Things he reads in the newspapers give him unpleasant and uncomfortable thoughts. Fears he may become impulsive after reading them. (I should say here that I believe 50% of the suicides and many of the crimes committed are directly due to the details of crime, etc., as published in the newspapers which offer suggestions to the unbalanced mind.)

Treatment: Started patient at once on a generous diet with egg-nogs, morning and afternoon, with hot milk at night, also antiseptics, principally glyco-thymoline, 1 dr. in water t.i.d.

Sept. 28. Patient is walking four or five miles a day, also riding a bicycle. Still sighs a good deal and seems depressed, with some headaches. Says that he had some "spells" as he calls them during which he felt he was going insane. About two weeks ago, had a crying spell, the second time that he ever cried in his life. Since this time he has seemed relaxed. His skin has looked less sallow and brown and he perspires quite freely. Gave a history of a fall on the ice some time ago at which time he was unconscious for a moment.

Oct. 8. Patient says for the first time he feels that he is really getting better.

Nov. 5. Patient calls at my office to say that he considers himself as well as ever. Tells me that this last summer before I saw him he felt, when he had an axe in his hand, that he must kill some one with it, also felt that he must choke some one. He once walked to the edge of a pond near the house to throw himself in, but that his moral strength was too strong at the last moment. He now says he is not at all choked up his work, which I have consented to after he has

taken a trip to the Pacific coast and back. Is taking only intestinal antiseptics, and these are to be gradually reduced.

Jan. 1, 1906. Patient has had no return of former symptoms. Took up his business after returning from his trip in the spring of 1903, and is now doing more business than ever. Has large interests in electric roads in the south and southwest; employs all the state convicts in one of our southern states in the manufacture of shoes; has just leased a large building in one of our southern cities, also for the manufacture of shoes; and in addition has interests in an insurance company, piano manufactory and real estate in connection with the large estate of his father. This case is plainly one of recovery.

CASE V. Oct. 5, 1903. C. F. I. Male. Fifty-five years. Bank officer and has scarcely been absent from his work a day in over thirty years. Father is said to have been insane; also a sister's child is insane. Recently patient's position was changed; the new work upset him and he became confused not only over the new work but also over matters generally. Could not sleep. Found no sympathy at home. Says for several years has had much gas and uncomfortable feeling in stomach. Now has nausea and frequent eructation of gas. Had to give up his work. Much depressed. Worries continually about different matters. Has pressure all over his head.

Two days ago felt so badly that he left his house at seven o'clock in the evening with a revolver in his hand saying he was going to shoot himself. Wandered about in the dark until eleven o'clock not having the courage to carry out his threat.

Treatment: Prescribed glyco-thymoline 2 dr. in water t.i.d. after meals. Bromide with ergot. Also high enemas of salt solution. Paraldehyde for insomnia, and a trip into the country.

This patient improved up to a certain point, and is able to lead an outdoor life in the country without mental responsibility, so may be classed among the improved cases.

Nov. 17, 1905. He writes that he has had a year of peace, that he is in pretty good condition, that he has a good mountain home and is getting on very well.

CASE VI. June, 1903. E. T. S. Female. Married. Age forty years. Several children. Born in England. Wife of a partner of a prominent publishing firm in New York. Now spending summer in New Hampshire. Cannot bear to have her husband away. Says she has a desperate feeling that her mind is unhinged and has "a horrid impulse to suicide or something worse." Has frightful dreams and a crushing pain in the back of her head. Has been taking stimulants to keep her spirits up. Has insomnia, waking about three in the morning and being unable to go to sleep again. Says "When I do sleep, I am harassed by terrible dreams. This is a beautiful country and the air is delightful, but the implacable silence of it frenzies me and I feel a maddening desire to destroy myself or something." Appetite poor. Much gas in bowels and stomach. Constipated.

Treatment: Stopped all stimulants and restricted her diet. Placed her on antiseptic tablets made by manufacturing chemists and prescribed elimination by perspiration.

Aug. 22. Writes: "I believe the tablets have been beneficial for I am feeling immensely better, and quite reconciled to this place. I am now desperately ashamed of having lost my self-control. I am trying to follow all your directions, but won't you allow me just one cup of tea a day? Have been constipated of late, but I feel extremely encouraged." This is the

last I have heard from this patient, and therefore is classed among the improved cases.

CASE VII. January, 1903. E. P. Female. Married. Age, thirty-five years. Has had periodic attacks of depression for several years. Case referred to me by Dr. V. Y. Bowditch. Patient is of nervous temperament. Is always able to entertain herself, having many accomplishments including painting, designing, leather work, etc. Clever and intelligent.

Was brought to me by her mother from New York, and had to be carried to her apartment at the hotel, not being able to stand or walk. Has delusions of self-persecution and thought she was had done wrong at different periods of her life, but could not make it plain to anyone else. Has lost much flesh. Mother says these attacks come about once a year. Head feels badly and aches a great deal of the time. Is confused and cannot bear the light. Worries a great deal because she has never had children. Dreams are unpleasant. Has been gradually running down for some time. Tongue is coated. Breath bad. No abnormal amount of gas.

Treatment: Gave liquid diet. Calomel in 1-10 gr. doses. Beta naphthol in 5 gr. doses an hour before meals. Benzoate of sodium $\frac{1}{2}$ dr. one hour after meals. High enemas of salt solution, and salt baths at night. No other drugs or medicine.

Feb. 11, no headache for some days. Sleeping very well every night. Diet now consists of Matzoon four times a day; eggnog; chicken soup; bouillon; toast; juice of an orange; Mellin's Food; lettuce; cereal milk; celery and occasionally a small piece of steak.

March 12, sat up for an hour. Is now taking a more solid diet.

March 18, saw a visitor for half an hour; slept for two hours afterwards. Is now sleeping from ten to twelve hours a day, which includes the morning and afternoon nap.

March 24, on regular diet. Eating and sleeping well. Goes to the theatre, driving, walking, etc.

Feb. 1, 1906. Patient has had no attack since she recovered from the last one in 1903. Her husband lost his position in 1905, causing the family to give up their house and the patient to support herself; this she is doing by designing silver. The change disturbed her to the extent of making her restless, but she slept and ate well and is now working for remuneration, for the first time in her life. This case has recovered and under favorable circumstances there should be no relapse.

(To be continued.)

THE SECRET OF THE MAYOS' SUCCESS.

BY WILLARD BARTLETT, A.M., M.D., ST. LOUIS.

SITUATED in Rochester, Minn., a pretty town of eight thousand inhabitants, there is a surgical clinic which is altogether unique and remarkable. It may be said to have been founded by the father of the present surgeons in charge. In 1883 a tornado swept through the fertile valley in which Rochester lies, and about eighty people were more or less seriously injured. The Sisters of St. Francis, who maintained a convent in Rochester, nursed the wounded, under the direction of the senior Mayo and, in consequence of the experience thus gained, conceived the idea of building a hospital for him. This early undertaking was a success, and from the humble

beginning has grown the beautiful and useful structure with one hundred and fifty beds which, from the outset, has been devoted to surgery exclusively.

W. W. Mayo, the father, now a hale old man of eighty-six, was aided a little later by W. J. Mayo, now forty-four, and a little later still by C. H. Mayo at present forty years of age. The father has long since retired from active practice, though his genial presence is frequently manifest at the hospital.

This perfectly equipped modern structure stands among evergreen trees on the slope of a hill overlooking the fertile valley in which the town of Rochester nestles. The building is complete in every detail, from the operating-room equipment to a clinical laboratory in which are installed all of the latest devices for emergency pathological diagnosis, as well as for permanent work of a statistical bearing.

Before entering the hospital every patient must pass through the private offices of the Mayos, where a trained corps numbering sixteen is employed to work up the various details of "up-to-date" diagnosis. Like specialists in other fields, the Mayos have a great many cases referred to them by internists and other physicians, but it is worthy of note that a far larger percentage of those who occupy beds in St. Mary's Hospital come solely on the recommendation of other patients who have been treated there. In this way the "material" differs essentially from that of most surgeons.

One knowing the vast amount of work that is done at Rochester will naturally ask the question, Where do so many people come from? A recent magazine writer, in speaking facetiously of the work, referred to the "scope of a country practice"; and it is astonishing to note that this "country practice" has embraced benign stomach cases from twenty-six states and Canada, as W. J. Mayo stated in a recent article on the subject. A wag, when asked where the Mayos got all their patients, remarked that they were not yet getting any from Mars or the other planets, for as yet they all came from this world; and indeed he was not so far wrong for they do come from almost all parts of this globe. A surgeon who was visiting the Rochester clinic in 1905 is authority for the statement that at one time there were in the hospital residents of the following American cities: New York, Chicago, St. Louis, New Orleans, Washington, Minneapolis, St. Paul and Denver, so you may estimate the scope of this country practice.

In 1904 these two men did over three thousand surgical operations, and the average daily number performed is now somewhere between twelve and fifteen. The greater number of these are major procedures, but the ease and celerity with which they are turned off will astonish the observer who is at the clinic for the first time. Naturally, an unequalled opportunity for post-graduate work in surgery is presented at Rochester, and the generosity with which explanation and descriptions are given is surprising. The

Mayos never seem to tire of answering questions, and they must be called upon to answer the same questions many times.

On Oct. 6, 1905, the Society of Clinical Surgery met in Rochester as the guests of the Mayos, and a list of the operations performed on that day will no doubt be of interest to those who are desirous of knowing what the clinic furnishes in a day:

(1) Abdominal hysterectomy; (2) pelvic tumor; (3) inguinal hernia, appendectomy and excision of the gall bladder; (4) chronic ulcer of the stomach; (5) tuberculous glands in the neck; (6) chronic ulcer of the stomach; (7) exophthalmic goiter; (8) cancer of the pylorus; (9) cystic gall bladder; (10) obstruction of the common bile duct; (11) perineorrhaphy and internal Alexander operation; (12) chronic ulcer of the stomach.

One might suppose that this was a special program in view of the fact that so many distinguished guests were present, but it is interesting to note that the next day's program was equally varied, with fourteen, instead of twelve, great operations.

To show what a wealth of statistical material is accumulated at Rochester, one has but to refer to the fact that up to 1905 some eight hundred stomach operations had been performed there, and more than eleven hundred abdominal sections for gall-stone disease. This seems almost incredible to one who has not visited Rochester, and any description which deals with cold figures alone must be utterly inadequate to do the subject justice. Those who have not seen the Mayos work are wont to ask, How is it possible for them to do so much in so limited a time? It is true they usually commence about 8:30 a.m. and are through in time for a one o'clock lunch. This facility is hard to explain, though it seems simple enough to an observer on the ground. The reason is that the utmost simplicity prevails. The Mayos' system is perfection itself. The assistants are trained to the highest degree and are permanent, while the dexterity of the surgeons themselves is marvelous. Two operating rooms are in constant use. No time is lost between operations, yet there is not the slightest evidence of nervous haste.

Surgeons flock to Rochester. If ten men were asked to tell exactly what they went for, one would reply that they went to get some of the Mayos' *tricks*. The Mayos have shown rare ability in selecting what is best in the technique of every clinic they have visited while their own ingenuity makes an indelible impression on visitors, and their methods, which are now common property, were once the astonishment of all men who saw them at work. It is common enough in any operating room to hear the surgeon say he is doing this or that by the Mayo method, but the observer has not to hear one of the brothers call an operative procedure his own.

Each may be called trope to a stream in surgery. William J. Mayo devotes almost his entire attention to intra-abdominal lesions, es-

pecially those of the stomach, duodenum and biliary passages. Charles H. Mayo does everything else, as well as those above mentioned, in his brother's absence. C. H. Mayo is thought to be most famous for his work on exophthalmic goiter, glands of the neck, inguinal hernia, senile prostate and varicose veins of the lower leg, although he operates for cataract or some other eye lesion almost every morning. Thus it will be seen that the two brothers cover an immense field and, when both are at work, divide the field between them. At the same time the work does not suffer when either is on his vacation. The work of the two is not alike, so comparisons as to their technical ability are impossible. The observer is most impressed by the fact that William J. Mayo is masterful, while Charles H. Mayo is ingenious. — if one may describe each by a single adjective. Those who know these men best recognize that their one leading motive in professional life is to do what is best for their patients, and to expose these fortunate or unfortunate ones to the minimum of danger.

What is the secret of the Mayos' success? In a word it is simply whole souled love of their work and devotion to duty, supplemented by American ambition, ingenuity and management. Many of the qualities that have made the Mayos successful and famous have made Rockefeller the richest man in America, and Edison the most noted electrician. There is no chance or accident about all this. The Mayos are striking personalities, who stand for something, and that something is success in surgery.

Clinical Department.

A FATAL CASE OF GASTRIC TETANY.

BY LINCOLN DAVIS, M.D., BOSTON.

THE following case of gastric tetany seems worthy of record, not only on account of the comparative rarity of the disease, and the obscurity which still surrounds its etiology, but also on its own account by reason of the severity of the symptoms, and the rapidity of the fatal outcome.

On July 17, 1905, at Marblehead, I was called about 10.30 P.M., to see a maid servant who was said to be having convulsions. I found a poorly developed, emaciated woman, single, forty-two years of age, lying in bed in a state of great nervous excitement, moaning with pain and declaring that she was dying. She was conscious, and able to respond to questions. It was not easy, however, to get a definite history of her ailment from her, as she could concentrate her mind on any one subject only for a moment at a time. From her, and from other servants in the house, I was able to learn that she had been in her usual health until that afternoon. She had vomited then, and shortly afterwards the pain and numbness began in her hands; this gradually increased and extended to her legs, until she finally reached the state in which I found her. She denied having taken any medicine or drug, and there had been no mental shock of any kind so far as could be learned.

Examination.—Face deeply flushed. Pupils equal. Respiration seemed normal. Pulse 100. Temperature 99. Heart sounds normal. Both arms were flexed at elbows and wrists; the fingers were flexed at the metacarpo-phalangeal joints, and extended at the phalangeal joints; the thumb was adducted and flexed on the palm of the hand. The hand was strongly pronated and held close to the chest, in the characteristic conical or obstetric position. The spasm of the left hand was more marked than in the right. Both feet were strongly plantar flexed, and the toes were likewise flexed. No spasm of other muscles was noted; the muscles of the neck were relaxed, and permitted of free flexion of the head. Great pain was complained of in the affected muscles.

Under gentle and persistent passive motion and massage, together with verbal assurance that her condition was not alarming, the spasm of the muscles of the left hand relaxed, and the fingers could be fully extended; also the wrist and elbow. The abdomen was somewhat distended, soft and not tender.

I gave her morphia, gr. $\frac{1}{4}$ subcutaneously, and directed that a dose of epsom salts be taken in the morning. When I left her that night the muscular spasms had almost wholly gone, and she was resting quietly, quite free from pain.

The correct diagnosis was not made by me at this time, nor, in fact, later, the relaxation of the spasm having led me to regard the condition as hysterical.

The next morning there was still some stiffness of the left hand, and fingers; otherwise her condition seemed normal. She had had a fairly good night; vomited once. I decided to take her to Boston to the Massachusetts General Hospital.

The patient was able to sit up in the train, and seemed quite normal during the first part of the trip. The locomotive unfortunately broke a driving rod, which necessitated a delay of about one hour. It was a very hot day, and the heat in the stalled car became intense. The patient complained greatly of this, and became quite restless, and began to have spasmodic contractions of both hands. When we finally arrived in Boston the contractions of the arms had become pronounced, and she was groaning with pain. Nevertheless she was able with slight assistance to walk from the car to a cab, and from the cab into the hospital. Having given a brief account of the case, I was obliged to leave the patient and did not see her again.

The following is an abstract of the hospital record:

East Medical Service. Dr. Minto. V. 625, p. 192.
N. McE. Maid. Single. Forty-two years of age.
July 18, 1905.

Well developed and poorly nourished. Face and hands cyanotic. Conscious. Pupils contracted, equal, and react to light. Tongue moist, slight white coat. Teeth in good condition. Throat negative. Glands in neck and groins. Heart: Impulse and dullness in 4th space inside nipple line, three and a half cm. from midsternum; action regular; first sound at apex replaced by loud, harsh systolic murmur transmitted to axilla; second sound at apex not heard. Lungs negative. Abdomen, full, soft and tympanitic; no masses. Spleen not palpable. No edema. Jaws open half way. Forearms tightly flexed on arms over chest, and wrists and fingers firmly flexed, with thumbs inside; cannot be extended. Both legs extended with toes flexed. Legs can be flexed with difficulty. Temperature 100.8; pulse 120; respiration 25. Hemoglobin, 100%; leucocytes, 18,600.

Urine: normal, acid; albumin, sugar and bile absent; Diazo reaction absent. Sediment: many squamous cells and round cells; some leucocytes; very rare hyaline cast.

Patient complained of terrible pains in the arms, and begged to be relieved. Given apomorphin, gr. 1-30 and gr. 1-16, causing slight vomiting of watery fluid with whitish particles in it. Patient later fell asleep. Muscles relaxed. One hour later patient was shaking violently all over, with indefinite movements of arms and legs. Sweating profusely. Pupils dilated. No stiffness of neck. Could not be aroused to consciousness. Given morphia, gr. 4. Coma later became profound, and no more signs of spasm were observed. Temperature 106.4 by rectum. Cheyne-Stokes respiration. Died at 7.45 p.m.

Cerebro-spinal fluid was examined by post mortem lumbar puncture. Cover glass showed no cellular elements; no bacteria. No growth on culture in forty-eight hours.

Autopsy No. 1431. Twenty-four hours post mortem, by Dr. Oscar Richardson.

"Anatomical Diagnosis.—(Tetany.) Congenital abnormal smallness of the pylorus and the upper end of the duodenum. Acute dilatation of the stomach."

"Body that of a woman forty-two years of age; 161.5 cm. long; fairly well developed; very poorly nourished. Head not examined. Incision restricted to a seven-inch cut in abdominal wall.

"Peritoneal cavity is free from fluid. Peritoneum smooth and shining. Appendix not remarkable. The lower border of the stomach as well as can be made out extends below the umbilicus, and the organ occupies a large space in the peritoneal cavity.

"Lungs, pericardium and heart on section, are not remarkable. Aorta smooth.

"Liver is of good size, and on section rather dark red in color, and somewhat soft. Spleen is small and, on section, not remarkable. No stones in gall bladder. Bile ducts free. Pancreas is rather dark and soft. Duodenum of Wirsung is free.

"The stomach is of enormous size; it measures 55 cm. in length and has an average width of 11 cm., and about 5 cm. in the other dimension. These dimensions are taken with the organ filled with just sufficient water to show its shape. On section, the organ contains a considerable amount of semi-fluid material of about the consistency of pea soup; one prune stone is also present. The mucosa presents no lesions. The pyloric opening is very small; it is about 7 mm. in diameter. The pyloric ridge is rather thin, and there is no thickening of the wall of the stomach or of the duodenum in the region of the junction of the stomach and duodenum, nor is there any fibrous thickening about them. The upper portion of the duodenum narrowed down to a circumference where it joins the pylorus which is equal to the circumference of the pylorus. The duodenum, a little below the pylorus, is of about normal size and continues so throughout its length. There are no ulcers in the lower end of the duodenum. Further examination restricted.

"Specimen preserved."

The autopsy at once cleared up the diagnosis and stimulated my interest to learn something more of the past history of the case.

Through the kindness of Dr. Samuel Richardson I was enabled to learn that the stomach's symptoms, especially the vomiting, began about three years previous to her death, and at about the same time she began to emaciate. Her appetite was ravenous, but nearly all food would be vomited sooner or later, if not on the same day, then on the following one.

In February, 1904 she was admitted to the

Boston City Hospital, where she stayed three weeks. The following abstract of her record was kindly furnished me by the hospital:

"N. McX., forty, single, Ireland, chambermaid, admitted Feb. 28, 1904, Medical Side. Diagnosis: Pyloric stenosis, malignant (?). Family history negative. Past history: Attack similar to present, one year ago. Present illness: Stomach trouble for two months. Pain and discomfort in epigastric region. Attacks of pain, sharp in character, coming on usually one hour after supper. Pain caused palpitation occasionally, but no special dyspnea, and is accompanied by nausea and vomiting every thirty-six to forty-eight hours. Vomitus consists of slimy, foul-smelling material, about three pints at a time. Blackish material once after taking black powder prescribed by a physician. Pain relieved by vomiting. Good deal of gas and cructations. For four days past, vomiting has been persistent in smaller quantities, and vomitus of same character. Feels weak. Bowels move with medicine. Best weight 122 lbs., one year ago. No cough, no headache; nothing ever noticed wrong about kidneys or bladder.

"Physical examination: Heart normal, pulses arteriosclerotic (?). Lungs: Dullness, right apex. Abdomen: Flat; tenderness in right epigastrium, accompanied by muscular spasm and sense of resistance; tympanitic throughout.

"March 3. Patient vomited twice since entrance. Less pain. Still some distress. No blood. Examination of vomitus: Amount, 1200 cc., color brownish (bismuth?); reaction, acid to litmus, odor fermentative; considerable amount mucus; food, small amount, fine particles. Free hydrochloric acid absent; lactic acid absent; total acidity, 328%; butyric acid absent; acetic acid absent; sediment, oil drops; starch granules. Considerable mucus; question of cells.

"March 7. Occasional attacks of vomiting since last note. More or less gastric distress. Stomach washed out yesterday and inflated, showing large stomach, with apparent mass at pyloric end felt, size of half dollar. Examination of contents shows hydrochloric acid present, which was absent at the last examination. Less distress since stomach so treated. Fluid diet until present, when milk toast has been added.

"March 11. Much improved. No further vomiting. Up past two days. Mass felt in right epigastrium and is now less marked. Feels stronger.

"March 15. Up every day since last note. General condition improved. Eats well, gaining flesh. No further vomiting. Now on soft solids, no gastric distress.

"March 19. Continues to improve. No gastric symptoms. Mass in pyloric region now less evident to touch. Area of stomach remains large. Advised to have exploratory operation performed, but refuses. Held as to probable nature of trouble and need of continued observation.

"Discharged fully recovered, past March 26, 1904."

After her discharge from the hospital, she was treated gastric trouble by a private physician, and professed to herself to be cured. A stomach tube was found among her effects after death. A note of the patient recalled that in the winter of 1903 the patient remarked that when sewing her hand and foot would sometimes become so stiff that she would drop her needle. This recalled her own fear or her own such an attack that of March 1st.

In considering this case it is to be regretted that the evidence to be obtained from certain internal tests, such as Treves's phenomenon

and Chvostek's, Erb's and Hofmann's signs, which are considered pathognomonic of tetany, is lacking.

In spite of the fact that none of these tests was made the diagnosis of tetany is unassailable, I think. The character of the contractures is recognized in the light of subsequent study to have been characteristic, and the whole course of the disease typical of the severe form of gastric tetany.

This case throws no light on the obscure subject of the etiology of gastric tetany. It was unfortunate that the restricted post-mortem examination allowed, did not permit of an examination of the parathyroid glands, which recent investigations would seem to show may play an important rôle in the causation of those peculiar muscular spasms which have received the name of tetany. The case does, however, very forcibly present the subject of treatment.

The treatment of this condition will necessarily remain unsatisfactory until the pathogenesis is better understood. Pursuant to the latest etiological theory the administration of parathyroid gland extract has been proposed. This is being tried at the present time, but it is as yet too early to speak of results.

Prevention is better than cure in this condition as in all others. The records of cases of dilatation of the stomach associated with tetany, which have been operated upon, gastro-enterostomy being the usual procedure, seem to show a complete immunity from subsequent attacks. Such a case was that operated upon by Watson, and recently reported by Cunningham. If this immunity from tetany is real and lasting, it is an added factor favoring the operative treatment of dilatation of the stomach.

The patient in this case was offered the benefit of an operation at the City Hospital, but refused. If the operation had been done, it seems unlikely that the case would ever have been known as one of gastric tetany.

The treatment advised for the attack itself is largely symptomatic and a long list of sedatives and even anesthetics have been proposed. It would seem rational to empty the stomach when that organ is filled with fermenting material, and yet the literature of the subject abounds with instances in which fatal attacks of tetany have been evoked by the act of vomiting, or the passage of the stomach tube.

When the spasms are severe it would seem expedient to administer ether, and under anesthesia to wash out the stomach, then, if the general condition of the patient warranted, the performance of gastro-enterostomy at the same sitting might be considered in an appropriate case.

It is questionable, I think, if any line of treatment would have saved this patient. It is generally recognized that after the spasms become severe, the condition is a very grave one. The cases of gastric tetany of all grades collected by Frankl-Hochwart, Riegel and Albu show a mortality between 70% and 80%.

Medical Progress.

RECENT PROGRESS IN GYNECOLOGY.

BY W. L. BURRAGE, M.D.

ONE DISADVANTAGE OF THE TRENDLENBURG POSITION IN ABDOMINAL OPERATIONS.

C. LAUENSTEIN¹ points out a danger which attends the elevated pelvis position, namely the entrance into the upper regions of the abdomen of infective matter from the vagina. He operated on a young woman for what he supposed to be an ovarian tumor, a prior examination having failed to reveal the presence of the gonococcus in the secretions from the vagina. At operation he found double pyosalpinx. He performed double salpingectomy with supra-vaginal amputation of the uterus, the patient being in the head down position, the vagina not having been previously sterilized. The operation lasted half an hour only and there was little shock. Death ensued in twenty-four hours and the autopsy revealed the presence of diplococci and staphylococci in the abdomen. Lauenstein thought that gravity and suction had transferred the infective organisms from the vagina to the abdomen.

[There is no doubt but that this is a real danger and that where there is special likelihood of infection, either from the vagina or from the contents of the tubes, many operators prefer to perform as much of such operations as possible with the patient flat.]

REMOVAL OF CARCINOMA OF THE POSTERIOR WALL OF THE BLADDER UNDER SCHLEICH ANESTHESIA.

J. C. Webster² reports the case of a woman of sixty-nine who had a circumscribed patch of carcinoma on the posterior wall of the bladder as diagnosed by the cystoscope. There had been hemorrhage for three months. The woman was weak and anemic. The operation was done entirely under local infiltration anesthesia with the Schleich No. 2 mixture. The bladder was filled with salt solution and a bag placed in the rectum. A wide transverse incision was made nearly an inch above the pubes, dividing the lower end of the recti and fascia down to the external peritoneal tissue. The peritoneum was dissected from the posterior wall of the bladder and the bladder was incised without any further local infiltration anesthesia, and the diseased area was removed. The aperture in the bladder was closed with formalin catgut; the ends of the divided recti and fascia were approximated by means of catgut and interrupted silk sutures which also included the skin. The wound and the bladder were drained. On removing the catheter from the bladder on the ninth day there was slight urinary leakage from the wound for three or four days, ceasing permanently on reintroducing the catheter for four days. The patient was able to hold her urine for from two to two and a half hours and was ready to leave the hospital at the time of the report.

¹ Muenchener med. Woch., 1905, lii, 805.

² Amer. Jour. Obstet., lii, 893, 1905.

THE BLOOD SUPPLY OF THE UTERUS.

J. H. Keiffer¹ has studied the ultimate distribution of the uterine arteries and particularly the connection between the circulating blood and the contractile substance of the organ. He employed carmine gelatin injections of the arteries in the human uterus made on the day of its removal. Such a study gives information as to the method of irrigation and nutrition of smooth muscle and allows one to appreciate the different functional conditions of the uterus.

Each artery arises directly from one of the principal uterine arteries and pursues a course of greater or less extent, usually of the helicine form, in the midst of the parenchyma. It is surrounded constantly by a layer of loose connective tissue which separates it from the uterine tissue proper and is continuous with the common interfascicular connective tissue. After giving off collateral branches, here and there, this artery diminishes insensibly in caliber, in thickness and in amount of its adventitious connective tissue coat. At a certain point the periarterial connective tissue disappears and the little arteries, progressively reduced, come in direct contact with the uterine muscular tissue and with the interfascicular tissue. Finally, the smallest arterioles lose the last muscular elements of their wall and are represented by an endothelium applied directly to the parenchyma. These capillaries form the small circulatory system of the uterus. They are irregular clefts which run in all directions, effect all the anastomoses, and develop a considerable vascular surface with a wall of a single layer of endothelium, which is in contact with all the muscular and connective tissue elements of the uterus. From the complicated plexus of these tissues very important clefts appear here and there. These clefts are quite large; they traverse muscle and connective tissue, and gradually become individualized and constitute the first canals deserving the name of veins. The veins resemble the arteries already described in their histology and course, and finally leave the organ on its lateral surface.

The physiological characteristics of the uterus explain the anatomical characteristics of its circulation. The helicine form is in direct relation with the necessities of the variations of volume produced by menstruation and pregnancy. The changes in these vascular systems depend upon considerable elongation, followed by a return to the primitive condition. The arteries preserve a decided functional interdependence on account of their surrounding loose connective tissue layer. Their walls are able to contract firmly and freely and to transmit the arterial blood wave even to the muscular masses. The intimate relation of the endothelium of the little circulation to the muscular masses gives one the idea that the capillaries and the veins possess the entire uterus as their wall, so that it may be said that the uterus is a true organ, organ.

ADVISABILITY OF OPERATING ON NEURASTHENIC PATIENTS.

In a symposium of gynecologists and neurologists, at a meeting of the Obstetrical Society of Philadelphia, in December, 1905,² Dr. R. L. Dickinson presented the paper entitled "The Uterus and Ovary of Neurasthenia," maintaining that treatment of gynecological disorders by surgical operation was to be advised in all but the congenitally delicate, the hysterical, the melancholic and all not subject to long observation.

Dr. F. X. Dercum, in the discussion, expressed the opinion that in the great majority of cases pelvic disease and neurasthenia, when coexistent, were coincident, and thought that there was no causal relation whatever between them. Neurasthenia, pure and simple, was synonymous with chronic nervous fatigue, the symptoms being characteristic and definite, all indicative of a ready exhaustion upon slight exertion. He entirely agreed with Dr. Dickinson that in the chronic and aggravated type of neurasthenia in women, pelvic symptoms were prominent. Neurasthenia, he said, may exist, independently of any pelvic disease, neurasthenia and pelvic disease may exist independently in the same patient, and, when pelvic disease and neurasthenia co-exist, the pelvic symptoms may be more readily recognized by the patient and, therefore, become more prominent because in neurasthenia the reaction of the nervous system to pathological impressions is exaggerated. Pelvic disease he thought, never caused true neurasthenia. That various signs of nervous weakness should be present in serious local or general disease, weakening the entire organism and with it the nervous system, was not surprising.

This state, he called spurious neurasthenia. The nervous symptoms directly due to pelvic disorders were exceedingly limited. The doctrine of reflex nervous disorders had been entirely dissipated by an increasing knowledge of the various functional diseases to which the nervous system was liable. A dispassionate consideration of the subject led to no other conclusion than that the surgeon should operate on surgical indications only.

Dr. Charles K. Mills thought that in a majority of cases of a neuro-gynecological type the conditions presented are dependent on neurotic or neuropathic tendencies in the individual which a study of hereditary predispositions would disclose.

Dr. J. M. Bally deprecated the undue prominence given to trivial abnormalities of the uterine organs by certain gynecologists and by pathologists. He did not believe that neurasthenia was caused by pelvic disease.

Dr. William C. Spiller did not believe that neurasthenia in most cases could be cured by treatment of the generative organs, and in cases of mild disorders he thought it better not to give any treatment to these organs. He cited Kruff's long statement that out of 2500 cases of

¹ Bulletin de l'Académie Royale de Médecine de Belgique, vol. 51, N. Y. Med. Jour., 1906, 1279.

² N. Y. Med. Jour., 1906, p. 378.

thenic females, he had been able in only nine to find a relation between the reproductive organs and the neurasthenia. Spiller thought that removal of the ovaries was one of the most serious operations from a neurological point of view, that could be performed on a neurasthenic.

Dr. John G. Clark attributed much of the meddlesome operating of the past to Charcot's teaching, Charcot having described a type of hysteria associated with so-called ovarian pain at a point where a line drawn between the anterior superior spines of the ilia intersects the outer border of the rectus muscle, the "Charcot's point." As a matter of fact the ovaries are situated much below this line and have nothing to do with the pain. He advocated turning over to the neurologist the neurasthenias of hereditary origin; those with pelvic lesions coincident he thought should be treated because the pelvic disease aggravates the nervous symptoms; in a third class of cases, the neurasthenias incident to pelvic lesions, operation should be undertaken at once.

The whole question pivoted around the history, and every phase of the patient's past life should be inspected with reference to the various possible manifestations of neurasthenia.

In the discussion of a paper on *The Border Line in Medicine and Surgery*, read by Dr. E. G. Janeway before the Practitioners' Society of New York, Feb. 9, 1906,⁵ Dr. Charles L. Dana referred to the unstable condition of the so-called neurotic persons. He said there were a large number of persons, particularly young people, who were always ripe for the development of a psychosis, and an operation appeared to be a determining factor. He could recall many cases in which an operation had produced an obsession, or neurasthenia or hypochondriasis and this had led him to the view that before an operation on a person of this temperament was advised or undertaken, the family and personal history should be very carefully gone into.

THE IMPORTANCE OF MAKING A CAREFUL EXAMINATION OF ALL MYOMATOUS TUMORS DURING HYSTERECTOMY.

T. S. Cullen⁶ reports a case of a supravaginal hysterectomy for interstitial and subperitoneal myomata in which there developed in the stump of the cervix two years after operation a sarcoma, which caused an alarming hemorrhage, and death in eight months. In this case the myomatous tumor was examined superficially at the time of operation. The uterine cavity showed nothing unusual on being laid open. After the development of the sarcoma the tumor was examined with more care and then there were found in the myoma, not only areas of hyaline degeneration, but also round and irregular areas of typical sarcoma.

Cullen urges the importance of examining at the time of operation not only the uterine mucosa but the structure of the myoma as well. He

prefers a supravaginal hysterectomy to a complete hysterectomy because the former is easier, it leaves a better support to the pelvic floor, there is less danger of tying the ureters, and, as the blood supply of the bladder is little interfered with, there is less likelihood of a post-operative cystitis.

INSANITY AS A RESULT OF OPERATIONS ON THE OVARIES AND UTERUS.

Graeme M. Hammond,⁷ in a paper read before the New York Psychiatrial Society, takes the ground that the ovaries and uterus have nothing to do with the preservation of the integrity of the brain, and that their removal alone never causes insanity; that the insanities which follow operations on these organs depend on a hereditary tendency to insanity, the psychologic causes, the physical causes, and surgical shock, but that the principal cause of all is the congenitally defective brain.

The discussion which followed the reading of the paper developed a substantial agreement among the members of the society with the views of the reader.

MECHANICAL SUCTION AND HYPEREMIA IN GYNECOLOGY.

J. Eversmann⁸ tells of his experience at the Bonn clinic with his apparatus to produce suction on the cervix uteri. It is simpler than the instrument devised by Dr. Rudolph,⁹ and consists of a large test tube with a small offset tube near the rounded bottom. A rubber tube leads from the mouth of the offset to a stopcock, and another tube from the stopcock to a suction pump. The mouth of the test tube is placed over the cervix and suction established with the pump, when the os is drawn far into the tube and can be seen to be much congested. The procedure is used for a twofold purpose, — to remove the secretions and to stimulate the circulation in the uterus. Applications are made for half an hour at a time, with intervals of several days, gradually shortening the intervals until they are made daily. After suction has been made for five minutes the stopcock is opened for one minute and then the suction again applied, this alternation of suction and normal atmospheric pressure being one of the factors in the treatment.

The author's experience has been especially favorable to this method of treatment, more particularly in cases of endometritis with considerable discharge. Exudates in Douglas' cul-de-sac were gradually softened and absorbed.

Kraemer of Giessen¹⁰ presents a similar apparatus with a mercury manometer attached to register the amount of suction. He uses the apparatus in acute inflammations to localize the infectious material as well as in passive hyperemia.

⁷ Jour. Amer. Med. Assn., vol. xlv, 713.

⁸ Zentralblatt für Gyn., 1905, No. 48, 1467.

⁹ *Ibid.*, No. 39, 1185.

¹⁰ Zentralblatt für Gyn., 1906, No. lii, 112.

⁵ Medical Record, vol. lxi, p. 443.

⁶ Jour. Amer. Med. Assn., vol. xli, 695.

OVARIAN CYST SIZE OF A CHILD'S HEAD WHICH DEVELOPED IN OVARY LEFT BEHIND AT HYSTERECTOMY FOR FIBROMA.

A. Calmann¹¹ did a vaginal hysterectomy on a patient thirty-nine years of age for small multiple fibroids, pyosalpinx and enlarged ovary on the right side and salpingitis on the left side. The left ovary appeared to be normal and was not removed. Three years later a cyst the size of a child's head and developed in the left side of the pelvis and the patient complained of pain in the abdomen and the nervous symptoms of the menopause.

The cyst was removed by abdominal section and proved to be a corpus luteum cyst. Recovery and relief from pain followed but the nervous disturbances were as before.

A NEW OPERATION FOR COMPLETE PROLAPSE AFTER THE MENOPAUSE.

T. Landau¹² proposes the following procedure to relieve prolapse in patients who have passed the menopause, other operations having proved unsatisfactory in his experience. There are nine stages: First, the usual disinfection and drawing forward of the prolapsed uterus as far as possible. Second, a long incision in the anterior wall of the vagina beginning close under the urethra and extending to within 2 or 3 cm. of the os uteri. Third, detach the vaginal walls after incising the anterior lip of the cervix, and separate the bladder from the uterus. Fourth, open the vesico-uterine pouch of the peritoneum and antevert the uterus. Fifth, pick up a fold of the peritoneum of the posterior cul-de-sac and by means of a silkworm gut suture which is passed through the posterior surface of the uterus as well as the peritoneum of the cul-de-sac and the wound in the anterior vagina, the cul-de-sac is obliterated and the uterus is turned forward into the vagina. Tying the suture closes the peritoneal cavity and fixes the posterior wall of the uterus and the cervix. Sixth and seventh, remove the adnexa and the greater part of the body of the uterus, using a longitudinal incision and leaving behind a portion of the posterior wall of the cervix; also resect the superfluous tissue in the anterior walls of the vagina. Eighth, close the anterior vaginal wound and the remains of the uterus with sutures. Ninth, perform a high colpoperineorrhaphy. The operation lengthens the vagina, fixes the posterior portion, aided by the remains of the uterus and, with the support afforded by the strengthened pelvic floor prevents prolapse of the abdominal contents. There are no difficulties in the technique according to Landau, and he considers the operation less serious than total excision of the uterus.

REDUCTION OF CHRONIC INVERSION OF THE UTERUS BY ABDOMINAL SECTION.

L. V. Friedman¹³ discusses the different methods of reducing chronic inversion of the uterus and advocates a method employed by

him in two cases. The abdomen is opened by the usual median incision and the patient placed in the Trendelenburg position. The bowels are walled off by a plentiful supply of gauze thus diminishing the extent of peritoneal exposure and trauma. If possible the contracted ring of the cervix is dilated with the fingers, but if the constriction is so tight as to prevent this procedure the ring is dilated first with a steel dilator of the Wathen or Goodell type, then with a Reynolds' dilator, which has been found peculiarly serviceable. In inserting the steel dilator and in dilating care must be taken to avoid pressure on the tubes and round ligaments. Only moderate force should be used, and this must be regulated by the hand and not by any mechanical device on the dilator. In a few minutes it is possible to partly withdraw the round ligaments and tubes, though no force is to be employed and no attempt should be made to reinvert the uterus by traction on the ligaments or tubes. At this point an assistant places his hand in the vagina and begins to carry up that part of the uterus which descended last; as this rises it is caught and held by vulsellum forceps in the hand of the operator. The process of dilatation, reinverting and holding are repeated until the operation is completed. The procedure is a slow one and no violence should be used. A skilled vaginal assistant is necessary.

Friedman points out the following objections to Spinelli's operation, the ideal vaginal operation as advocated by R. Peterson: By the vaginal route the tubes and round ligaments are exposed to vaginal contamination and then immediately turned free into the abdomen. As both tubes, round ligaments and sometimes a loop of bowel are packed tightly into the crater formed by the inverted uterus, there is the risk of injury to these organs in making the vaginal incision. If this incision is made posteriorly there is apt to result an adherent retroversion; if made anteriorly we have the undesirable vaginal fixation. Finally, there is the possibility of a rupture of the uterine scar in a subsequent pregnancy.

Friedman's operation is similar to that done by T. G. Thomas in 1869 before the days of asepsis, and now brought into line with modern ideas.

Reports of Societies.

THE NEW YORK ACADEMY OF MEDICINE.

SECOND PAPER, FEBRUARY, MARCH 29, 1906.

SYMPOSIUM ON THE TRAINING OF NURSES.

The first paper was by GEORGE F. LADHAM, superintendent of the New York Hospital, on

THE ORGANIZATION AND CONTROL OF TRAINING SCHOOLS.

He said that the rise and development of the training school for nurses was one of the most remarkable features of the modern hospital scheme. The accommodations for the pupil nurses, while at first of extreme simplicity, were now of the most expensive and elaborate character. The curriculum had developed into a highly scientific and comprehensive

¹¹ Zentralblatt für Gyn., 1903, No. 47, 1440.

¹² Ibid., 1903, No. 43, 1321.

¹³ Medical and Surgical Reports, Boston City Hospital, 1903, 65.

system. The calling of the trained nurse had been exalted into a profession, for which laws were enacted, and in which a title was conferred after graduation. Periodicals and volumes were devoted to the subject, and national and even international associations had been organized. All this marvellous growth had occurred in little more than a quarter of a century, and the movement was recognized as one which concerned the interests of all classes of the population.

The work of the hospital medical staff and of the training school should be intimate, harmonious and complementary. As so much depended upon the principal, the importance of the selection of a proper person for this position could not be overrated. The number of assistants employed must depend on the size of the institution. It was an objection to the present system, he thought, that the advanced pupils are placed in charge of wards, and thus take part in the teaching in the nursing course. This was a defect, as there was a wide difference between a good nurse and a good ward-keeper. It was true that the patients did not suffer, but the discipline and general tone of the ward were liable to fall below the proper standard. Such a condition he believed to exist at the present time to a degree which was not formerly the case, and the remedy for it was in the appointment of permanent and well-paid head nurses. A woman in this position if thoroughly competent, would insure tidiness, ventilation, the proper preparation and distribution of food, and other matters pertaining to the welfare of the ward. Again, there should be a closer relation between the medical staff and the training school. The complete division between the two at present he thought very objectionable. It should be a part of the duty of the visiting physician to give instruction in the school.

As to the matter of control, the school should be regarded as distinctly one of the departments of the hospital's work. Unfortunately, the present tendency was towards greater independence on the part of the training school. As well might a company be independent of its regiment, or one regiment independent of the rest of the army. The special points which he would make, then, were: (1) The school should be a distinct department of the hospital, under the control of the executive authority of the institution. While allowed a certain amount of freedom in the management of its affairs its administration, should be subordinate to this central authority. (2) A closer relation between the medical staff and the school. (3) The wards to be in charge of capable, permanent head nurses.

MISS MARY A. SAMUELS, superintendent of the Roosevelt Hospital Training School for Nurses, read on a paper

WHAT NURSES SHOULD BE TAUGHT.

She took the ground that, in addition to the practical art of nursing, the pupil should receive systematic instruction in a large number of scientific subjects. The thoroughly equipped nurse, she said, should have some knowledge of anatomy, physiology, bacteriology, urinalysis, radiology, hypodermoclysis and materia medica. In bacteriology, the instruction should be elementary, but thorough as far as it went. In support of this opinion she referred to the matters of asepis, antitoxin and tuberculosis. The nurse's education, she thought, must be far more comprehensive than what was considered adequate a few years ago. It was also a fact that the average applicant for the position of trained nurse fully appreciated the necessity of a more thorough training and the advantages gained by a three years' course. The scientific branches should be taught in a preliminary

course, which should be at least six months long, and the instruction should be given by textbooks and recitations, rather than by lectures. As the pupil advanced in her course, the theoretical teaching should go hand in hand with the practical. Domestic science should always receive proper attention, and fortunate was the woman who had had some training in this before entering the school. The study of foods, in health and in disease, was of paramount importance. Having referred to massage and some details of practical nursing, she said, that a three years' course was now the rule among the training schools. While this might seem a long time to spend in the qualification for a professional career the average duration of which was comparatively short, it was to be noted that women were now entering the schools at a younger age than was formerly the case. In conclusion, Miss Samuels spoke of the necessity of taking sufficient time for ethical training. Without a proper education of the heart and character, all the rest was worthless.

DR. W. GILMAN THOMPSON read a paper on

THE OVER-TRAINED NURSE.

He said there was a feeling among a large number of physicians that the trained nurse of to-day was absurdly over-trained. The pseudo-scientific teaching prevalent in the schools was a mistake, as it left the pupil at the time of her graduation with only a smattering of knowledge on a multitude of subjects. In the instruction given there was too much of theory and too little of practice. Curiously enough, while the tendency in the medical schools was to give constantly increasing attention to clinical teaching, and to restrict the amount of didactic teaching, the reverse of this seemed to be true of the training schools for nurses.

Having referred to the enormous increase of training schools and students, he said, that among the latter we now heard much less of sentiment than formerly and much more of business. While in many schools the course was three years, in some it was three and a half years. In one it was already four years, and in one in Boston it was proposed to make it even five years. Yet all this training was for something which was in no sense a profession, but simply a calling or vocation. Moreover, it was out of all proportion for a practice the average duration of which was stated to be but ten years. This he believed to be approximately correct. Dr. Thompson quoted a number of questions given at nurses' examinations, and remarked that they would mostly be appropriate for first or even second year medical students, while some of them would puzzle the graduated M.D. Many of them also included the treatment of disease. He had known of instances where the over-trained nurses were so officious in the wards that the house-staff had taken refuge in the clinical laboratory; leaving the patients to get along as best they might.

As far as ordinary medical nursing was concerned, a two years' course was quite sufficient for the training. For those who desired to fit themselves for special work there might be an additional year, and when they had completed this course they might receive a special certificate. It had been argued that the hospitals were better served when the nurses had a long course of training, but he did not think so. The employment of third-year pupils to take charge of wards was desired by the hospitals, because it enabled them to get rid of paying for head nurses.

The enactment of legislation in behalf of the trained nurse was accompanied by many difficulties, and the nurses themselves were not agreed as to what they

wanted. The very best nurses sometimes passed the poorest written and oral examinations. The registration and licensing of the nurse might act as a boomerang, as the laws in the different states would vary, as they do in regard to divorce. There was no more necessity for legislative enactment for the nurse than there was for those engaged in any of the liberal arts. The fact was that to-day we are in the hands of the Nurses' Trust, with a trade union policy and union prices. What the community greatly needed was a body of trained workers for simple cases. For these a six months' hospital course would be sufficient, and the public could obtain their services at a much lower rate than that now paid the regularly trained nurse.

In conclusion, he expressed the opinion, that physicians connected with institutions having training schools should insist on representation in the boards of management of such schools, not merely in an advisory, but a governmental capacity and that the curriculum adopted should be approved by them. The primary responsibility for the present system of nurses' training, he said, belongs to the members of the medical profession, who, if they would devote as much time to the training school curriculum and the relationship of the nurses' work to that of the house-staff as they do to their medical duties, would soon produce ideal results in the system; which, despite its shortcomings, has been of great benefit even since it was established.

DR. A. ALEXANDER SMITH spoke on

THE TRAINED NURSE AND MEDICINE.

He said that at the outset he wished to pay a tribute to the many excellent qualities of the "sick-nurse," who preceded the trained nurse and who was still the dependence of the medical profession when he was an interne in Bellevue Hospital in 1872. It was generally supposed that the training school established at Bellevue in 1873 was the first of its kind, but he had ascertained that there were already two schools in existence at the time this was started. To-day we could not get along without the trained nurse. The personality of the nurse was a very potent factor, for good or ill, in the welfare of the patient. No matter how long or how thorough her training, it all went for naught, unless she was a true woman, with kindly feeling and possessed of tact. The management of the patient's environment (in which the patient's friends were included) was a difficult as well as important matter, and the treatment accorded the nurse often determined the results of a case. The attempt to discipline a patient might prove disastrous, and what the nurse needed above all things was tact.

DR. ROBERT ADAMS spoke on

THE TRAINED NURSE AND SURGERY.

He said that the trained nurse had come to stay, and she had almost entirely displaced the male nurse. The efficiency of the nurse depended largely on the sagacity of the superintendent of the training school. Out of a thousand applicants the principal would select perhaps a hundred for admission, and out of this hundred only twenty-five might complete the course. Those chosen were the best women for this kind of work. The proper qualities of mind and character made up four fifths of the composition of the successful nurse, and good training the remaining fifth. If selecting a nurse to take charge of a surgical case he would demand only that she should be a graduate of a reputable school at a large hospital. In surgical practice it was a fact that at the present time the tendency was for the duties of the nurse to become simpler, while those of the surgeon were becoming more complicated. Secondary hemorrhage was very rare to-day, and if it did occur, it required very little knowledge to apply the

requisite pressure until the attending surgeon could be summoned. Some knowledge of passing the stomach tube and of making saline injections was necessary for the surgical nurse, but these were procedures which were employed every day in a large hospital and with which every pupil in the training schools was perfectly familiar. In a laparotomy case the only essential was that everything which went into the wound should be rendered aseptic. In whatever emergency might arise in surgical practice an intelligent woman could be counted upon to do the right thing. Here the principal thing that the nurse needed was a well-balanced and a cool head, and a good medical nurse was as capable as a surgical one. Dr. Adams thought that a two years' course in the training school was quite sufficient for equipping the pupil with all the knowledge which was essential for her calling. Her cases ought to be her books.

DISCUSSION.

DR. A. G. GERSTER said that at the Mount Sinai Hospital, with which he was connected, the curriculum of the training school was very elaborate. Through the efforts of the medical staff, however, the requirements demanded had recently been somewhat simplified. He was entirely in accord with the opinions expressed by Dr. Thompson. It was impossible that a course of training should be thorough where there was such an overwhelming mass of material included in the instruction given. The insistence on this "pseudo-scientific" curriculum was all the more reprehensible because it was totally unnecessary for the ends in view. The pupil nurse should be taught only a few things, but in these she should be thoroughly grounded. The smattering which she received of a great variety of subjects she would very readily forget because it was impossible for her to digest such a mass of knowledge. The stand taken by Dr. Thompson was not a matter of partisanship. He did not desire a battle between the medical profession and the nurses. The only question which ought to be considered, was, What is the best thing for the patient? What was best for the patient, he thought, could be most satisfactorily learned at the bedside.

Recent Literature.

On Becoming Blind. Advice for the use of Persons Losing Their Sight. By DR. EMIL JAVAT, Honorary Director of the Ophthalmic Laboratory of the Ecole des Hautes Etudes, etc. Translated by Carroll L. Tolson, A.M., M.D. New York: The Macmillan Co. 1905.

The first paragraph of the introduction states the *raison d'être* of this book as conceived by the author. He says: "Having lost my sight suddenly at a relatively late age, I had just entered my sixty-second year, one of my first cares was to inquire what might be done to live with the least possible evil with my infirmity. Great was my surprise to find nowhere any collection of advice on this matter. In short the attention of the friends of the blind, or typhlophiles has been concentrated either on the bringing up and instruction of the blind young or upon charity organizations for the blind poor. . . . The sufferer and complete loss of sight is a relatively infrequent misfortune."

The author details his experience and researches for the benefit of those especially whom he

terms "parvenus" in blindness, and to help the family of the blind. He believes also that his confrères who are oculists may find in his pages advice which they may use to the profit of their unfortunate patients. The book is also intended to serve men of the liberal professions who have just made the "leap in the dark."

Even the general reader will find much charm in this little book. The American translator, Dr. Edson, has done his work with delicacy and discretion.

The Diseases of Infancy and Childhood. For the use of Students and Practitioners of Medicine. By L. EMMETT HOLT, M.D., Sc.D., I.L.D., Professor of Diseases of Children in the College of Physicians and Surgeons (Columbia University), New York; Attending Physician to the Babies' and Foundling Hospitals, New York, Consulting Physician to the New York Infant Asylum, Lying-In Hospital, Orthopedic, and Hospital for the Ruptured and Crippled. With two hundred and forty-one illustrations including eight colored plates. Third edition, revised and enlarged. New York and London: D. Appleton & Co. 1906.

The third edition of this well-known treatise, which occupies practically the same position among American works on the Diseases of Children that Osler's Practice of Medicine does among those on Medicine, continues to merit all the praise bestowed on the earlier editions. The book has been pretty generally revised and brought as nearly up to date as is possible in a work of this size. The illustrations have been increased in number and improved in quality. The principal alterations have been made in the articles upon the Examination of the Sick Child, Hypertrophic Stenosis of the Pylorus, Diarrheal Diseases and Dysentery, Vaginitis, Cerebrospinal Meningitis, Mental Defects, Chondro-Dystrophy, Status Lymphaticus and Diphtheria, some of which are new. While it may seem captious to criticise in any way such an admirable work, certain things do seem worthy of notice. We are surprised, for example, to see that the author still continues the irrational method of calculating the amount of the alkali added to the infant's food in relation to the total quantity of the mixture instead of to the amount of cream and milk, and that he still seems to consider the action of twenty grains of bicarbonate of soda equivalent in its effect on digestion to that of one ounce of lime water. He does not mention the new discoveries of van Slyke and Hart on the digestion of casein and does not take up the action of alkalies on digestion in this connection. Nothing is said about the operative treatment of brachial birth palsy, and acute polio-encephalitis is only referred to incidentally. We regret to see that the terms "marasmus" and "pleuro-pneumonia" are still retained, and fail to see why chondro-dystrophy and cretinism are placed among the diseases of the nervous system. These, of course, are minor matters and do not affect materially the value of the book.

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THE QUESTION OF A HOSPITAL FOR CHRONIC DISEASE.

THE situation regarding the care of chronic disease in this community is such that certain measures must be taken in the near future to improve the conditions if Boston is to retain its place as a progressive medical center. We have recently had occasion to comment upon the lack of facilities for the treatment of persons in the late stages of tuberculosis. Since that editorial was written it is gratifying to observe that the trustees of the proposed tuberculosis hospital have decided that only those cases which are not incipient will be received. This is a step in progress, but in our zeal for the alleviation of the tuberculosis situation it should not be forgotten that chronic disease of other sorts is prevalent and that persons suffering from distressing maladies which are incurable have no permanent abode in this city except in the almshouse hospital at Long Island and in a few smaller special institutions. This means that the great proportion of the chronic sick and incapacitated must be declared either paupers or be forced back upon their families for such treatment as can be given in their homes. This situation demands reform, and one way at least seems open at the present time.

For some years past the suggestion has been made that the almshouse and hospital of the Long Island Institution should be separated, that the hospital should become purely an institution for the care of the sick, and that its inmates should not be subject to the declaration of pauperism as is now the case. It is true that, as the institution is now constituted, a separation of the

actually sick from those who are merely decrepit and are therefore placed in the almshouse class is difficult to make. Many of the aged and infirm through arteriosclerotic changes and other conditions due to advancing years are in one sense properly classified as sick. On the other hand, such persons require little medical care and are no doubt more economically and more satisfactorily cared for in an institution which is not strictly speaking a hospital. However difficult the matter may be, it is evident that the distinction must sooner or later be drawn and that we must have in Boston a hospital for the chronic sick in precisely the same sense as we have long had hospitals for acute disease. Alderman Curley has recently introduced a resolution in the Board of Aldermen relative to the separation of the Long Island Hospital from the almshouse department of the city. The feeling underlying this resolution coming from a lay source is no doubt the same as that which thinking physicians are everywhere recognizing.

Those who have followed the somewhat remarkable development of the Long Island institution in the past ten years realize that the most significant change which has taken place is the prominence which has been given to the hospital. It has been perfectly apparent to the great majority of those concerned in this development that hospital care in the best sense of the word was peculiarly demanded for a large number of the inmates of the institution. Recognizing this necessity, the hospital idea has steadily grown until now this department is presided over by a staff of one resident physician and six house officers, together with a visiting staff which makes visits with increasing frequency. It is quite impossible that any backward step should be taken in this beneficent charity, and it is altogether desirable that still further progress should be made. The time, therefore, seems ripe, as Mr. Curley and many others have suggested, for a legal separation between the hospital and almshouse departments, which are now conducted in conjunction in such a way that each is a certain detriment to the other. The separation practically exists at the present time, and so far as the administration is concerned the steps to make the separation complete could not be attended with great difficulty. The details, however, we have no desire to discuss at the present time. The decision to make the separation a fact is now the pressing matter.

It is hardly necessary to deduce arguments in favor of the establishment of an independent

hospital for chronic disease. It should be evident to the most casual observer that disease, whether acute or chronic, demands the best service which modern methods can give. It is hardly too much to say that the chronic sufferer often demands more care than the person ill with a self-limited disease. In the second place, it is manifestly unjust that pauperism should be a necessary accompaniment of the misfortune of illness. It is one of the great injustices of the present system that a poor man, hopelessly incapacitated, should be legally classified as a pauper. The hospital for chronic disease should stand on precisely the same footing in this respect as the hospital for acute disease. We confidently expect that the near future will see this consummation, for which the trustees of the tuberculosis hospital have in a measure paved the way. It is clear that the good work cannot stop there, and that, much as we need a hospital for the care of advanced cases of tuberculosis, none the less essential is a hospital for the care of all cases of chronic disease, absolutely irrespective of its character.

THE TRAINING OF NURSES.

It is evident that a certain reaction is taking place regarding the whole matter of the training of nurses. The development of the trained nurse has been an exceedingly rapid process and it is therefore not unnatural that mistakes have been made which are now somewhat tardily being recognized. The attempt to exalt the calling of the nurse to a profession, and the natural consequences which flow therefrom, is fraught with danger which cannot be longer overlooked.

In this connection it is interesting to call attention to a recent meeting of the New York Academy of Medicine, an abstract of which is published in this issue, at which the subject under discussion was the Training of Nurses. The entire trend of opinion of those who took part in the discussion, with the exception of Miss Mary A. Samuels, superintendent of the Roosevelt Hospital Training School, was to the effect that too much rather than too little is taught in the training schools as at present constituted. Such men as Drs. W. Gilman Thompson, A. Alexander Smith, Robert Abbe and V. G. Gerster took part in the evening's discussion. Dr. Thompson's paper was entitled, "The Overtrained Nurse," and expressed in very forcible language what many of the wisest men in the profession are rapidly coming to feel. He thought that the nurse of

to-day was absurdly overtrained, that her pseudo-scientific training was a mistake, that the time of training was too long, that legislation in behalf of the trained nurse was not desirable, that the charges for nursing are too high, and that physicians themselves should take more interest in the regulation of the curriculum. The others who spoke agreed essentially with Dr. Thompson's position. Dr. Abbe, for example, thought that two years in a training school was quite sufficient for equipping a nurse with the knowledge essential for her calling. He also was of the opinion that the proper qualities of mind and character make up four fifths of the composition of the successful nurse, and good training the remaining fifth. Dr. Gerster was equally strong in his insistence upon the mistake made in attempting to train the nurse in various so-called scientific subjects to the neglect of the essentials of nursing. At a recent meeting of the New England Association for the Education of Nurses, held in Boston, Dr. John C. Munro read a paper in which, with no mincing of words, he pointed out the errors and fallacies of our present system. That he is right in his main contention no one who has had wide dealing with nurses in private practice can for a moment question. It is to be hoped that nurses everywhere may have an opportunity to read this paper, published in *American Medicine* for March 31, in order that they may, more than they often do, see themselves as the physician sees them. "The nurse," Dr. Munro says, "should be trained to cultivate tact, humanity and the gentle art of caring for the sick. She should be less elaborately trained in the science of medicine. A few selected women should be trained for special and advanced work, but the selection should be exercised with great care and judgment."

This attitude toward the question of nursing will no doubt be accepted by a large number of physicians who have never given expression to their thoughts. It is right and proper that there should be much plain speaking now if the situation is not to become still more strained in the future. Certain matters are established. The patient's welfare is the first consideration. This must be cared for by the physician with the complete co-operation of the nurse. Anything which disturbs the relation either between patient and nurse or between nurse and physician is detrimental to the best good of the patient. Physicians are finding fault because this relationship is being disturbed, and this, in the minds of many, is due in last analysis to what may be bluntly called,

overtraining. If a nurse is obliged to devote three or four years to her training, with the prospect thereafter of approximately ten years of active life, the tendency for charges to become greater is inevitable and natural. The patient suffers inasmuch as he is paying for a sort of knowledge which is not required, and in fact which is often detrimental to the simple and conscientious performance of the disagreeable duties of the nurse. The conclusion, therefore, to which those to whom we have referred have come, and which we share, is that the over-training of nurses must stop, that the nurse's work should be looked upon as a vocation and not as a profession, and above all things that knowledge of whatsoever sort can never take the place of tact and proper feeling in the sick room. To take retrograde steps in any movement is difficult, but we are convinced that the time has come for those in charge of training schools to look the ground over carefully in view of present lay and professional opinion and to reorganize in many instances the over elaborated curriculum on a more practical basis.

DIET AS A THERAPEUTIC AGENT.

If one feature characterizes modern therapeutics more than another, it is rationality combined with, or perhaps a product of, common sense. We believe our faith is justified that therapeutic vagaries will be much less conspicuous in the future than they have been in the past. We shall either treat our patients by means for which there is adequate scientific and experimental evidence, or by methods which consider the individual as a whole whose general attitude of mind and physical condition must be regulated on the principles of ordinary common sense tempered with knowledge.

The general movement of which we speak finds expression in various ways. We are studying pharmacology as never before; body metabolism and the chemistry of physiological processes is receiving attention which cannot fail to lead to more accurate therapeutics. We are growing skeptical of drugs, and have given up the idea, still somewhat prevalent among the laity, that we habitually cure disease by their means. We are paying more attention to the mental attitude of the individual; psycho-therapeutics is gradually gaining a place which has long been denied it; attention to diet, to exercise, to general hygiene, and the use of various external means of treatment, are all being substituted for the

methods which demand that something, sanctified by precedent, must be given internally. In other words, the situation is rapidly approaching rationality. We still use drugs and no doubt will continue to use them, but our implicit faith in their efficiency is wavering in the same sense that our patients' faith is wavering. Out of all this experience is sure to come an improved therapeutics, and one which will benefit our patients because they will no longer look upon it as a mystery but as something of which they themselves can see the reasonableness.

We observe in the preliminary program of the Association of American Physicians that a group of papers is to be presented on Therapeutics Based upon Pathological Physiology. This naturally means that certain therapeutic procedures will be discussed on the basis of what we know rather than of what has been merely empirically indicated. In this connection also we note with interest that the last number of the *Practitioner* devotes its entire space, upwards of one hundred and fifty pages, to diet. In this one issue is collected a series of papers from the pens of a large number of special students on diet in connection with various recognized forms of disease, and, what is more worthy of observation, not only with those which are supposed primarily to affect the gastro-intestinal tract. For example, diet in epilepsy is discussed by W. A. Turner; diet in acute illness, by Dr. G. Newton Pitt; the effects of diet on circulatory disease by Sir Dyce Duckworth, and so on through a long list. As Dr. Robert Hutchinson remarks in his paper on the therapeutic uses of diet, the use of dietetic means of treatment has long been recognized, but in spite of this fact there is no method which we use with less confidence and precision. We cannot too warmly recommend this admirable series of articles to practitioners who fail to recognize in the proper administration of food a positive therapeutic procedure. It is of interest that Dr. Robert Hutchinson has also within the year published a second edition of his volume on "Food and the Principles of Dietetics," and that Dr. Francis Hare has likewise published in two volumes his researches and observations on the "Food Factor in Disease."

This simply points the way toward which our research is tending. We are investigating more deeply than ever before the underlying chemical problems, and perhaps even more important, we are systematizing our knowledge of agents and means of treatment long vaguely recognized but wholly unsystematized in the medical mind.

Diet, hydrotherapy, massage, medical gymnastics, electricity, psychotherapy, even fresh air, must all be studied seriously before they can be put to scientific use in treatment. This tendency is now apparent, and we have no doubt will lead to a rational therapeutics in the near future which will go far toward sapping the strength of quackery and establishing a more normal relationship between physician and patient.

THE ARMY MEDICAL BILL.

We have repeatedly commented in these columns on the need of reorganization and improvement of the medical department of the army. The bill, which is known as the Army Medical Bill and which is designed to increase the efficiency of the medical department of the army, has reached a final and critical stage in its progress toward legislative enactment. It has been passed by the Senate and reported favorably by the military committee of the house. Before it reaches the President, who has repeatedly expressed himself as in favor of its provisions, it must be brought before the House of Representatives. There is, however, no reason to think that it will be unfavorably acted upon by this body. The bill increases the officers of the medical corps by a total of 113. One object of this increase is to replace the greater number of contract surgeons, now numbering 170, by commissioned officers, thereby probably decreasing to a certain extent the total number of surgeons, but substituting for the contract surgeons men who hold regular commissions. A reserve medical corps is also proposed, the members of which will receive pay only when in actual service. In general, the design is to do away with the contract surgeon who occupies a somewhat anomalous position and raise the standing of the medical corps. Secretaries Root and Taft, the Surgeon General of the army, and many others high in authority approve the passage of the bill. From the standpoint of the medical profession at large it is clear that certain changes should be made and that the medical department of the army should forthwith receive the recognition which its importance, both in times of peace and war, deserves.

MEDICAL NOTES

NATIONAL QUARANTINE. It is reported that the House of Representatives has voted favorably upon the law which transfers provisions for the quarantine of contagious disease from individual states to the National Government. The expense

ence last year at New Orleans in relation to yellow fever is an excellent argument in favor of a more comprehensive plan of quarantine than has hitherto prevailed.

CASES OF CEREBROSPINAL MENINGITIS IN CHICAGO.—Two deaths from cerebrospinal fever (epidemic cerebrospinal meningitis) were reported in Chicago during the week ending April 7, the first since September, 1905. Investigation proved the character of the disease beyond question and revealed the existence of five other cases under treatment.

HYGIENISCHES CENTRALBLATT.—A new journal has appeared under the heading given above, published in Leipzig and designed to cover in its reviews the entire field of hygiene. The journal is represented in New York, London and Paris as well as in Leipzig, and the march of progress is further exemplified by the fact that several pages are inserted in English descriptive of the scope and general character of the journal. It is edited by Dr. Paul Sommerfeld and a number of collaborators. The journal takes up a field not hitherto covered by a periodical of this character. It will be devoted to abstracts which in this as in other departments of medicine have become essential in order to keep abreast of the literature.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON.—For the week ending at noon, April 18, 1906, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 38, scarlatina 37, typhoid fever 4, measles 145, tuberculosis 60, smallpox 0.

The death-rate of the reported deaths for the week ending April 18, 1906, was 23.40.

BOSTON MORTALITY STATISTICS.—The total number of deaths reported to the Board of Health for the week ending Saturday, April 14, 1906, was 234, against 235 the corresponding week of last year, showing a decrease of 1 death and making the death-rate for the week 20.50. Of this number 130 were males and 104 were females; 222 were white and 12 colored; 157 were born in the United States, 71 in foreign countries and 6 unknown; 52 were of American parentage, 156 of foreign parentage and 26 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 37 cases and 5 deaths; scarlatina, 47 cases, no deaths; typhoid fever, 4 cases and no deaths; measles, 159 cases and 2 deaths; tuberculosis, 50 cases and 29 deaths; smallpox, no cases and no

deaths. The deaths from pneumonia were 37, whooping cough 1, heart disease 24, bronchitis 6, and marasmus 2. There were 11 deaths from violent causes. The number of children who died under one year was 55; the number under five years, 75. The number of persons who died over sixty years of age was 43. The deaths in public institutions were 66.

There were 7 deaths reported from cerebrospinal meningitis during the week.

BEQUEST TO LOWELL, MASS., HOSPITAL.—It is announced that Mr. Frederick F. Ayer has given \$25,000 for the Children's Department and the Maternity Ward of the Lowell General Hospital. This is Mr. Ayer's second gift to the hospital of this amount of money.

BOSTON HOSPITAL FOR TUBERCULOSIS.—The Board of Trustees of the proposed consumptive hospital has voted that the hospital, when erected, shall be devoted to the treatment of all cases of pulmonary and laryngeal consumption other than incipient cases. This decision is based on the fact that the Rutland Sanatorium remains available for incipient cases and that the present demand of the city is for a means of taking care of the advanced cases. This opinion we expressed editorially in a recent issue.

NEW YORK.

APPROPRIATIONS FOR HEALTH DEPARTMENT.—At a meeting of the Board of Aldermen held April 3, \$20,000 was voted to the Health Department towards the establishment of the new tuberculosis sanitarium near Otisville, Orange County, and an appropriation of \$25,000 was passed for the improvement of the public baths in Rivington Street.

STATE SENATE PASSES AN OSTEOPATHY BILL.—The state senate at Albany has passed the osteopathy bill by a vote of 32 to 12. The principal provisions of the act, it is stated, are that practitioners of this sect, who are forbidden the prescribing of drugs or performance of surgical operations, are required to pass a Regent's examination and pursue a three years' course of study in a licensed school of osteopathy.

SUPPRESSION OF MEDICAL ADVERTISEMENTS.—Working in co-operation, the United States Postal authorities, the County Medical Society, and the local police have succeeded, it is believed, in practically putting out of business fifty-two so-called medical concerns which obtained their customers chiefly through advertisements in

three newspapers of the city. The newspapers in question were notified by the Post Office that these medical advertisements would have to be dropped, or the papers would not be allowed to go through the mails, and accordingly the advertisements were discontinued. Recently indictments were handed down against three of these advertisers, others left hurriedly for parts unknown, at the first rumor of trouble, and still others broke down, confessed and promised to give up their business. Without the newspaper advertisements these offenders, many of whom have been convicted in the past and nearly all of whom have been in trouble with the authorities, would be able to do but little, if any, business, and the County Medical Society considers that the withdrawal of the advertisements from the public prints is a death-blow to a fraudulent practice which has enjoyed prosperity in New York for many years.

UNDER THE TENEMENT HOUSE ACT.—Governor Higgins has signed the Prentice bill, which places tenement houses in which articles are altered, repaired or finished among those which, under certain conditions, the state Commissioner of Labor may cause to be classed as unclean, under the provisions of the Tenement House Act. The bill also provides that such goods when exposed to contagion shall be tagged accordingly.

HOSPITAL SATURDAY AND SUNDAY.—The distributing committee of the Hospital Saturday and Sunday Association met at the Mayor's office in the City Hall on April 12, and apportioned among the institutions represented in the Association the underdesignated fund of the 1905 collections. The total amount of the collections this season was \$94,000. Of this, \$9,000 was for specially designated hospitals. After deducting \$4,000 required to defray expenses, there remained \$81,000 for the general distribution. The apportionment is made on the basis of the free work done by the different hospitals during the year, qualified by the rule that no one institution shall receive more than 10% of the total fund, nor any less than the sum of \$250. The eleven hospitals leading in the amounts allotted to them were as follows: Montefiore Home and Hospital for Chronic Invalids \$8,100; Mount Sinai Hospital, \$8,100; St. Luke's Hospital, \$4,945; German Hospital and Dispensary, \$4,655; Roosevelt Hospital, \$3,919; Hospital for Ruptured and Crippled, \$3,783; Lebanon Hospital, \$3,494; Nursery and Child's Hospital, \$3,373; St. Mary's Free Hospital for Sick Children, \$3,268; Orthopedic Hospital and Dispensary

\$2,893; Home for Incurables, \$2,674. The New York Hospital, on account of its large endowment, has never asked for representation in the Association, while the Presbyterian Hospital receives the proceeds of a collection made specially for it in the Presbyterian churches; the latter not contributing to the general hospital fund.

ANNUAL MEETING OF THE AMERICAN MOSQUITO EXTERMINATION SOCIETY.—The third annual meeting of the American Mosquito Extermination Society was held at the New York Aquarium on April 11. In the course of his address, the president, Wm. J. Matheson, expressed the opinion that as soon as the public could be convinced that the extermination of the mosquito was practicable, relief from this source of danger would be afforded by National and State enactment. The secretary, H. C. Weeks, in his report stated that a bill directed against the mosquito was expected to pass the present session of the New York Legislature, and a New Jersey member announced that the Governor of that state was now considering a bill which appropriates \$75,000 for ditching certain salt marshes which have long enjoyed an unenviable reputation as breeding places for the pest. Dr. C. B. Davenport, director of the Biological Institute at Cold Spring Harbor, Long Island, read a paper in which he said that in many instances suitable measures were not undertaken on account of the lack of interest not only on the part of the public, but of the local boards of health. A statement designed for public distribution, entitled "The Mosquito Brief," which gives information regarding the various species of mosquitoes, their habits, modes of breeding and other characteristics, as well as the dangers attending their bites, was adopted by the Association.

MORTALITY RETURNS. The weekly reports of the Health Department show that the mortality in the city during the month of March represented an annual death-rate of 20.15, as against 18.81 in February and 20.08 in March, 1905. Among the diseases which showed an augmented fatality were the following: The weekly average of deaths from measles increased from 45½ in February to 51½ in March; the weekly average from whooping cough, from 3 to 4½; from diphtheria and croup, from 50½ to 5½; from cerebrospinal meningitis, from 18½ to 24; from pulmonary tuberculosis, from 171 to 194; from acute pneumonia, from 24 to 41; from pneumonia, 163½ to 170½; from broncho pneumonia,

from 120 to 140½; from diarrheal diseases, from 34½ to 42½; from diarrheals under two years, from 27½ to 35½; and from Bright's disease and nephritis, from 108 to 125. Among the few diseases in which there was a diminished mortality were the following: The weekly average of deaths from typhoid fever declined from 6¼ to 5½; from cancer, from 55¼ to 53¼; and from organic heart diseases, from 112 to 109. The mortality from epidemic cerebrospinal meningitis probably reached its maximum for the present season in the week ending March 17, when the number of deaths reported from it was 29. Since then there has been a decrease, the deaths from it in the week ending March 24 numbering 23, and in that ending March 31, 19. During the epidemic of this disease last year the number of deaths reported from it in the corresponding weeks was respectively 72, 85 and 131. Measles continues to be widely prevalent, and while the number of cases reported was progressively less each week during March, the mortality from it increased at the end of the month. The figures are as follows:

Week ending March 10, 2,384 cases reported, 55 deaths; March 17, 2,003 cases, 43 deaths; March 24, 1,952 cases, 47 deaths; March 31, 1,941 cases, 62 deaths.

Obituary.

A. C. M. MOIR, M.D. RESOLUTIONS FROM THE STAFF OF THE NEWTON HOSPITAL.

AFTER a long and trying illness, Dr. A. C. M. Moir, one of the younger members of the staff of the Newton Hospital, has died. The expectations of an ambitious life, the friendship and fellowship of years of activity with us in the hospital, the additional weight of fresh scholastic training,—all has been cut off, and we are called to record one less, present and prospective.

In view of this sad fact we are afforded easement of heart and mind in re-creating our remembrances of his interest and faithfulness in hospital work, his love of hospital associations and his frequent visits among us during the days of his health.

We sympathize in this loss with his family and relatives and wish this expression of our mind toward Dr. Moir to be spread upon the records of the meetings of the staff, that a copy be sent to Mrs. Moir, and also to the Newton papers and to the BOSTON MEDICAL AND SURGICAL JOURNAL.

FRANCIS E. PORTER, M.D.,

Chairman.

GEORGE L. WEST, M.D., Secretary.

Miscellany.

THE HARVARD MEDICAL SCHOOL AS VIEWED AT ST. PAUL.

THAT excellent medical monthly, the *St. Paul Medical Journal*, in its last issue (April) contains an interesting article by Dr. Thomas F. Harrington, of Lowell, on the Medical School of Harvard University, and an admirable editorial on the same subject. The editorial we reproduce entire below:

"The meeting of the American Medical Association in Boston, June 5 to 8, will undoubtedly attract a very large attendance from all over the country, and we hope that the Northwest will be well represented. The fact that Dr. W. J. Mayo of Rochester is president of the Association will prove a drawing card to many members from Minnesota. Boston is perhaps the most interesting city in the United States, not only from a general and historical point of view, but also from a medical standpoint. The medical traditions of Boston include some of the greatest epochs in the history of American medicine; we feel sure that every physician who visits Boston for the first time next June will desire to visit the Massachusetts General Hospital and stand upon the spot where ether was first administered in a surgical operation where, in the words of Oliver Wendell Holmes: 'The knife is searching for disease,—the pulleys are dragging back dislocated limbs,—nature herself is working out the primal curse which doomed the tenderest of her creatures to the sharpest of her trials; but the fierce extremity of suffering has been steeped in the waters of forgetfulness, and the deepest furrow in the knotted brow of agony has been smoothed forever.'

"Another institution which should be visited by every one is the Harvard Medical School. We are fortunate in having obtained from the pen of Dr. Harrington, one of the authors of the recently published 'History of the Harvard Medical School,' an article describing the beautiful new buildings of the Harvard Medical School. This article will be found on another page of this issue. When these buildings are finished the equipment for medical teaching at Harvard will be, beyond question, the first in the world, and we also believe that it would be difficult to find in any one medical school in any country a larger number of brilliant medical teachers or better clinical facilities for both under-graduate and post-graduate work than exist in Boston. Hitherto New York, Philadelphia and Chicago have attracted most of the students of medicine from this part of the country. In the future it is our belief that many of them will go to Boston. Furthermore, there is something in the atmosphere of Harvard that is lacking in the other great medical centers, and that something every man who practises medicine would do well to breathe for a while. We should hear less of medical graft and commercialism, of paying commissions for referred patients, and of contract medical prac-

tice if some of that same atmosphere could be found in the other great medical schools of this country.

"It is not enough that a medical education teaches the student how to recognize and how to treat disease; there should also be instilled into his mind, so that it becomes a part of his very being, the love of truth and of charity and of human kindness, and above all a high appreciation of the honor of his profession so that he will need no written code of ethics in order to live rightly his professional life. These things he imbibes rather by association than by the spoken word of his teachers, and these things Harvard has always stood for and always will."

MALARIA IN THE TROPICS.

COL. WM. C. GORGAS, chief sanitary officer, Isthmus of Panama, contributed a paper on this subject to a meeting of the American Society of Tropical Research held in Philadelphia, March 21. Colonel Gorgas, since 1898, has served four years in Cuba and two years at Panama, part of the time with troops, but most of the time he has been connected with municipal sanitation. At Panama, he is in charge of the yellow fever wards, and all non-immunes with fever from any cause coming into Ancon Hospital are sent to these wards. The larger proportion of such cases are malaria, about 200 malaria cases are treated per month. His experience has shown that malaria in the tropics is by far the most important disease to which tropical populations are subjected. While the percent of fatalities is not nearly so great as from some other tropical disease the amount of incapacity produced is much greater than that from all other diseases combined. At Santiago, while there were more deaths from yellow fever and typhoid fever than from malaria, it was the latter disease which prostrated the army. Even at Havana where malaria was by no means so general as would be expected, a greater number of persons died from malaria every year than from yellow fever. As a result of their mosquito work in Havana the deaths from malaria which for many years had averaged about 350 was in 1901, 351; in 1902, 77; in 1903 about 50, and has since remained at about 40. He considers Panama as favorable a place for the development of malaria as could be found. Three fourths of the disability among the laborers is due to malaria. To correct this, the greater effort was directed toward draining localities adjacent to towns and dwellings. In places that could not be drained oil was used very freely. An equally important measure is the giving of prophylactic doses of quinine. Thorough screening was also carried out. With 22,000 men on the payrolls during February, only 22 per thousand were incapacitated every day on account of sickness, three fourths of which was due to malaria. In his wards at Ancon he has personally treated 1,055 cases of malaria in the last six months. In each case blood exami-

nations were made and the character of the parasite recorded. The estivo-autumnal largely predominated, but the attacks in general were mild and yielded easily to treatment and among the 1,055 cases there were only 5 deaths. There have been 20 cases of hemoglobinuric fever in the past eight months with only 3 deaths. The treatment has been the persistent use of quinine, given for the first three or four days hypodermically, but as soon as vomiting ceases it is given by the mouth; twenty grains in the twenty-four hours hypodermically and thirty by the mouth has been the ordinary course. As sanitary conditions are improved, Colonel Gorgas believes it to be a rational hope that malaria will decrease in the same ratio.

THE HOSPITAL CONFERENCE OF THE CITY OF NEW YORK.

Dr. S. S. GOLDWATER informs us that in accordance with a resolution adopted at the meeting of hospital delegates, held on Feb. 21 in the United Charities Building, a second meeting was to be held at the Academy of Medicine, on Wednesday, April 18. Representatives of all of the hospitals of Greater New York were invited to be present.

The meeting of April 18 was called for the purpose of receiving the report of the Committee on Constitution and By-Laws appointed in February. Following the consideration and adoption of this report, a permanent organization will be completed by the election of officers and the adoption of a program for the ensuing year.

Semi-official assurance has been received that on the completion of the permanent organization of the Hospital Conference, various committees which have had under consideration problems of hospital finance and hospital economy will retire. The movement to establish and maintain a healthy state of affairs in hospital administration will therefore become concentrated and may be rendered permanently effectual by means of the Hospital Conference; and the fullest possible representation of the hospitals of New York is earnestly desired at next Wednesday's meeting.

Correspondence.

HOMOEOPATHY AND THE MASSACHUSETTS MEDICAL SOCIETY.

Boston, April 11, 1906.

MR. EDITOR: My opinion has been sought on the question of Homoeopathy, and I therefore state it as follows:

Guided by such light as the past offered, I am distinctly opposed to admitting the Homoeopathic to the Massachusetts Medical Society, while the nature of the cases and those connected with it.

This is admitting sects to part of the rights of an association which is entitled to be recognized as a medical society.

Very truly yours,

DAVID W. LEECH, M.D.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, MARCH 31, 1906.

| CITIES. | Reported deaths in each. | Deaths under five years. | CITIES. | Reported deaths in each. | Deaths under five years. |
|-----------------------|-----------------------------|-----------------------------|-----------------------|-----------------------------|-----------------------------|
| New York | 1658 | 548 | Quincy | 5 | 4 |
| Chicago | 111 | 1 | Waltham | 5 | 1 |
| Philadelphia | 625 | 133 | Gloucester | 9 | 1 |
| St. Louis | 111 | 1 | Pittsfield | 6 | 1 |
| Baltimore | 233 | 77 | Brookline | 9 | — |
| Cleveland | — | — | North Adams . . . | 2 | 5 |
| Buffalo | — | — | Chicopee | 9 | 4 |
| Pittsburg | — | — | Northampton . . . | 4 | 0 |
| Cincinnati | — | — | Medford | 4 | — |
| Milwaukee | — | — | Beverly | 10 | 3 |
| Washington | — | — | Hyde Park | 2 | 2 |
| Providence | 92 | 30 | Newburyport | 3 | 3 |
| Boston | 292 | 65 | Leominster | 3 | — |
| Worcester | 39 | 12 | Melrose | 5 | 5 |
| Fall River | 45 | 28 | Wohurn | 6 | 3 |
| Cambridge | 22 | 11 | Marlborough | 7 | 1 |
| Lowell | 46 | 18 | Westfield | 4 | 1 |
| Lynn | 32 | 3 | Peabody | 4 | 1 |
| New Bedford | 26 | 10 | Revere | 2 | — |
| Springfield | 23 | 8 | Clinton | 1 | 2 |
| Lawrence | 30 | 8 | Attleboro | 3 | — |
| Somerville | 29 | 10 | Adams | 1 | — |
| Holyoke | 14 | 4 | Gardner | 7 | — |
| Brookton | 10 | 3 | Milford | 7 | 3 |
| Malden | 16 | 6 | Weymouth | 1 | — |
| Salem | 18 | 3 | Framingham | 1 | — |
| Chelsea | 17 | 6 | Watertown | 1 | — |
| Haverhill | 19 | 9 | Plymouth | 1 | — |
| Newton | 12 | 2 | Southbridge | 2 | — |
| Fitchburg | 12 | — | Wakefield | 1 | — |
| Taunton | 8 | 1 | Webster | 1 | — |
| Everett | 6 | 1 | | | |

MEDICAL INTERNE.

GOVERNMENT HOSPITAL FOR THE INSANE. — The United States Civil Service Commission announces an examination on June 6, 7, 1906, to secure eligibles from which to make certification to fill at least two vacancies, at \$800 per annum each, with maintenance, in the position of medical interne, Government Hospital for the Insane, Washington, D. C., and vacancies as they may occur in any branch of the service requiring similar qualifications. Applicants should at once apply to the United States Civil Service Commission, Washington, D. C.

APPOINTMENT.

PATHOLOGIST AT THE CRAIG COLONY. — Dr. J. F. Munson, a graduate of the Literary and Medical Departments of the University of Michigan at Ann Arbor, and who has been acting as assistant to Dr. Victor C. Vaughan during the past two years, has been appointed Resident Pathologist at the Craig Colony for Epileptics, at Sonoma, N. Y.

RECENT DEATH.

DR. ROBERT C. DAVIS, of New York, died from pneumonia in the Roosevelt Hospital on April 13. He was a native of the South, and forty-seven years of age. He was graduated from the medical department of the University of the City of New York in 1880, and for twenty years had been an inspector in the Health Department service.

BOOKS AND PAMPHLETS RECEIVED.

On the Relations of Diseases of the Skin to Internal Disorders. With Observations on Diet, Hygiene and General Therapeutics. By L. Duncan Bulkley, A.M., M.D. London: Rehnman, Limited. New York: Rehnman Co. 1906.

The Influence of the Menstrual Function on Certain Diseases of the Skin. By L. Duncan Bulkley, A.M., M.D. London: Rehnman, Limited. New York: Rehnman Co. 1906.

Nasal Sinus Surgery, with Operations on Nose and Throat. By Beaman Douglass, M.D. Illustrated. Philadelphia: F. A. Davis Co. 1906.

Official Register of Harvard University. Reports of the President and the Treasurer of Harvard College. 1904-05. Cambridge.

The Diseases of Infancy and Childhood. For the Use of Students and Practitioners of Medicine. By L. Emmett Holt, M.D., Sc.D., LL.D. Third edition, revised and enlarged. Illustrated. New York and London: D. Appleton & Co. 1906.

Indigestion. An Elementary Study of its Causes and Treatment. By Fernandez Clarke, L.S.A. Lond., L.R.C.P. Lond., M.R.C.S. Eng. New York: William Wood & Co. 1906.

Department of the Interior. Bureau of Geographical Laboratories. I. Birds from Mindoro and Small Adjacent Islands. II. Notes on Three Rare Luzon Birds. By Richard C. McGregor. Manila. 1905.

The Influence of Facial Hemiatrophy on the Facial and Other Nerves. By Sir W. R. Gowers, M.D., F.R.S. Reprint.

The Practical Application and the Relative Value of the Tests used in Examining the Eye Muscles. By Alexander Duane, M.D. Reprint.

Some Unusual Fimbus Conditions. By Alexander Duane, M.D. Reprint.

Paralysis of Divergence. By Alexander Duane, M.D. Reprint.

Unilateral and Other Unusual Forms of Nystagmus. By Alexander Duane, M.D. Reprint.

International Clinics. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, Neurology and Other Topics of Interest to Students and Practitioners. Edited by A. O. J. Kelly, A.M., M.D., Vol. IV. Fifteenth Series, 1906. Illustrated. Philadelphia and London: J. B. Lippincott Co. 1906.

University of California Publications. Physiology. Can the Cerebral Cortex be Stimulated Chemically? (Preliminary Communication.) By S. S. Maxwell.

An Analysis of 152 Cases of Hallux Valgus in 77 Patients, with a Report upon an Operation for its Relief. By H. Augustus Wilson, M.D. Reprint.

Outdoor Life Versus Confinement in the Treatment of Bone Tuberculosis. By H. Augustus Wilson, A.M., M.D. Reprint.

Mammale delle Malattie dell'Occhio. Ad uso Degli Studenti e dei Medici Pratici. Del Dr. Edmondo Trombetta. Illustrated. Torino. 1906.

The Significance of Albumin and Casts when found in the Urine of Apparently Healthy Applicants for Life Insurance. By Edwin Welles Dwight, M.D. Reprint.

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING APRIL 14, 1906.

R. A. WARNER, assistant surgeon. Ordered to the Naval Academy, April 10.

W. F. SCHALLER, assistant surgeon. Appointed assistant surgeon, with rank of lieutenant, junior grade, from March 21, 1906.

J. B. KAUFMAN, A. H. ROBERT, M. H. AMES, C. K. WINN, W. S. KUDER, assistant surgeons. Appointed assistant surgeons, with rank of lieutenant junior grade, from March 24, 1906.

W. H. BUCHER, surgeon. Ordered to Washington, D. C., April 14, for duty in attendance on course of instruction at the Naval Medical School.

B. H. DORSEY, assistant surgeon. Detached from duty with Naval Recruiting Party No. 4, and ordered home to wait orders.

C. K. WINN, assistant surgeon. Ordered to duty with Naval Recruiting Party No. 4, at Des Moines, Iowa, April 30.

W. S. KUDER, assistant surgeon. Ordered to the Naval Hospital, Boston, Mass.

J. B. KAUFMAN and M. H. AMES, assistant surgeons. Ordered to the Naval Hospital, Norfolk, Va.

A. H. ROBERT, assistant surgeon. Ordered to the Naval Hospital, New York, N. Y.

A. PARENTIOL, surgeon. Detached from the "Oregon," and ordered home to wait orders.

J. P. DEBRULER, assistant surgeon. Detached from the "Oregon," and ordered home to wait orders.

SOCIETY NOTICE.

NEW ENGLAND HOSPITAL MEDICAL SOCIETY. — The New England Hospital Medical Society will hold its regular meeting at Hotel Nottingham, 730 R. M., Thursday, April 26, 1906. Section of General Surgery, Dr. Elizabeth T. Gray, chairman. Dr. William P. Bolles will give a paper on Colonostomy and Similar Operations with general methods of surgical routine. Discussion and reports of cases by Dr. Emma B. Culbertson and Dr. Clara Alexander.

BLANCHE A. DENIG, M.D., Secretary.

Original Articles.

THE SIGNIFICANCE OF JACKSONIAN EPILEPSY IN FOCAL DIAGNOSIS, WITH SOME DISCUSSION OF THE SITE AND NATURE OF THE LESIONS AND DISORDERS CAUSING THIS FORM OF SPASM.*

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WITH the exception of monoplegia or hemiplegia, probably no single symptom or symptom complex is so often made use of by the diagnostician in his efforts to fix the site of a tumor for the purpose of operation as Jacksonian epilepsy. This term is used here in a broad sense as meaning monospasm or hemispasm due to cortical or cortico-subcortical discharge, a spasm which usually exhibits, if closely studied, an initial symptom and a serial order of phenomena. As originally and as commonly employed, the mere use of the term is supposed to predicate the existence of a focal lesion of the motor cortex, and it is sometimes defined as a spasm limited to a single group of muscles, or at least to a few muscular groups. Irritation or instability of portions of the cerebral motor area, in by far the largest number of cases of Jacksonian spasm as here defined, is a direct or indirect cause of this form of epilepsy, but it is by no means true that it is always or even nearly always due to gross lesion of the motor zone. The greatest care should, therefore, be taken not to attribute to local spasm erroneous diagnostic value. While in many cases it is a most important guide, in others it may be misleading.

A distinction needs sometimes to be made between Jacksonian epilepsy and hemi-epilepsy. Some of the cases of hemi-epilepsy belong in the Jacksonian category, but they are not all to be relegated to it. The convulsive attacks following hemiplegia are frequently unilateral, but they may begin on the paralyzed side and become general. Occasionally they are confined to a portion of one side of the body. Frequently, probably usually, they are of cortical origin. When as is so often the case, the hemiplegia, especially in childhood and youth, is due to softening from thrombosis, the convulsional areas surrounding or in the neighborhood of the parts destroyed are often the seat of deep congestion and punctiform hemorrhages. They render the cortical centers unstable and convulsive discharges ensue, which may be confined to the limbs and face of one side, may be unilateral or may become general. The monospasm or unilateral convulsions which occur in cases of this description sometimes simulate very closely those which are due to brain tumor in the motor cortex or subcortex. They have the same mechanism as the Jacksonian spasms of tumor or other lesion, namely, irritation or instability of cortical motor cells. Hemi-epilepsy may,

however, in some instances be due to an irritative lesion well removed from the cortex or to some toxic state.

It is scarcely necessary to present, as could easily be done, a large number of cases in which Jacksonian spasm has been an important or a deciding symptom in successfully fixing the site for operation in the case of a cerebral tumor. Many such cases have been recorded, and not a few by the writer. I shall refer only, and that briefly, to the histories of a few such cases.

Dr. C. H. Frazier, May 2, 1903, operated successfully for tumor of the motor region in a case under the care of Dr. Wm. G. Spiller,¹ which was seen by me in consultation. This case had the typical features of a neoplasm of the motor region, including Jacksonian spasm. The patient was a motor aphasic and agraphic with paresis of the right side of the face, right arm and right leg, exaggerated reflexes, and most of the general symptoms of brain tumor. Sensory symptoms were absent. He had had frequent attacks of spasm confined to the right side of the body, chiefly to the face and arm. According to the notes of the case, he always knew when these attacks of spasm were coming on by a twitching in the right eye for about five minutes before the spasms developed. The attack began by a peculiar sound in the throat, the eyeballs then rolled about, and the right arm and hand became implicated in the convulsive movements. Sometimes the right lower limb was affected, but never the left side. Consciousness was not lost, and the man did not fall into sleep after the convulsions. The attacks occurred usually when the man was awake, but several times when he was asleep. The convulsions lasted about three minutes, sometimes longer.

I have had under observation a number of cases of cyst of the motor region in some of which unilateral convulsions or monospasms have been present, these being evidently due to the unstable condition of the cortex surrounding the cyst. In several such cases Dr. C. H. Frazier has operated, exposing the cyst, and in some instances cutting away its roof with some benefit in the direction of lowering the frequency and severity of the attacks.

A tumor largely limited to the motor region was removed by Dr. W. W. Keen from a patient seen by me in consultation with Dr. M. Bland and Dr. Keen. This patient's symptoms began with weakness in the left upper extremity about eight months before the operation. She had an attack of vertigo with monospasm about six or even weeks before operation. She gradually developed almost complete paralysis of the left upper extremity. She had about twelve to twenty attacks of the hand below the elbow. The left lower extremity was also almost completely paralyzed. The knee jerk and the deep reflexes on the left side were all exaggerated. Ankle clonus was persistent. The same reflexes on the other

¹Spiller, Wm. A. Personal History of a Case of Tumor of the Brain, with Operation. *American Journal of Medical Sciences*, February, 1904.

* Read before the New York Academy of Medicine, April 19, 1906. From the Department of Neurology, University of Pennsylvania.

side were prompt, but not abnormal. The Babinski response was present on the left; on the right the plantar response was prompt, but not abnormal. Examination made for sensation showed no sensory loss or impairment.

The Jacksonian spasm from which this patient suffered was observed in one attack by a trained nurse who reported that the spasm began in the arm by a lifting movement of the entire limb, and quickly extended to the hand and leg, and sometimes to the left side of the face. The operation was osteoplastic and was so planned that the opening included an exposure of the brain two thirds in front and one third behind the central fissure. A large sarcomatous tumor was successfully removed, the patient making a good recovery. This case, which I give only in its broad outlines, although reported to one or two societies, has not been hitherto published.

In one case of tumor of the motor region seen by me in consultation with Dr. T. C. Potter and Dr. Wharton Sinkler, the growth after accurate localization, was removed by Dr. Wm. J. Taylor.

The patient had no objective sensory symptoms although she at times complained of a numb feeling in the left side of the face, left arm and left leg, which were paretic, the loss of power being marked in the lower extremity. She had several convulsive seizures, chiefly affecting the limbs of the partially paralyzed half of the body. All the deep reflexes on the left side were increased, persistent ankle clonus being present. The Babinski phenomenon was elicited on the left side. Headache was not conspicuous, but vomiting occurred, and double optic neuritis was present.

One of the most interesting of my motor region cases was that in which successful operation was performed by Dr. W. J. Hearn at the Philadelphia Hospital, Oct. 21, 1902. This was a case of localized pachymeningitis and gumma of the cortex. The patient was a man twenty-seven years old, who had been struck in the left parietal region eleven years previously and who also probably had syphilis. Vertigo, headache, vomiting and optic neuritis were all marked symptoms during the development and progress of the case. His chief symptoms just before the operation were, extreme pain in the left parietal region, frequent spasmodic seizures beginning in the right hand and arm, and later involving the right leg and right side of the face, with temporary loss of power in the right arm and leg after the seizure. Tenderness was extreme over the left parietal scar and over the surrounding region for a distance of three inches or more. Grip in the right hand was slightly impaired. Sometimes immediately after a spasm loss of power in the right arm and forearm was marked. Biceps jerk in both arms was slightly increased, but triceps jerk was normal in both. Tactile, pain, and thermal senses and stereognostic conception were normal. Voluntary and resisted movements in the right leg and foot were slightly impaired. Knee jerks were exaggerated on both sides, more markedly on the right. Ankle clonus was present

on both sides. The Babinski response could not be obtained on either side.

In connection with these cases on which operation was performed, and several of which have been published in detail, I am able through the courtesy of Dr. C. W. Burr and Dr. R. L. Lavenson, to present the notes of an unusual case of Jacksonian epilepsy due to small cortical lesion. It will be seen that this patient had for a long time a continuing clonic spasm of the upper extremity, preceded by a marked Jacksonian spasm with unconsciousness. For a time the clonic spasm was intermittent. A few similar cases have been reported under the title of *epilepsia continua*. This interesting case will later be published in full. The following are notes furnished by Dr. Burr:

"The patient was a woman, fifty-five years of age, who, four years after amputation of the breast for carcinoma, began to have convulsive twitings in the left arm. At first the spasm continued for a few minutes to a half hour and would recur from ten to twenty times a day. About a week later quite violent convulsive movements commenced and were persistent. They decreased but did not cease during sleep. There were flexion and extension of the fingers, and flexion and pronation of the forearm. If the muscles were tapped the spasm increased greatly. Voluntary movement in the arm also increased the spasm. There was only slight loss of power. The patient did not complain of the left leg at all. On examination, however, there was seen a coarse, persistent, clonic, spasmodic tremor. She was able to walk and there was no palsy of the leg. The left knee jerk was increased, the right normal. There was no ankle clonus, no Babinski sign. She had no headache or vomiting. Once, before the spasm became persistent, the patient had a localized fit with unconsciousness, following which there was loss of power and sensation in the arm for a few minutes. This was the only time in which the sensation or consciousness was affected.

"The brain showed the following: The whole organ was somewhat atrophied. In the ascending frontal convolution of the right side, at about the hand center, was a spheroidal tumor about one third of an inch in diameter, arising from the pia and deeply compressing the cortex so that the tumor was buried in a socket. On microscopic examination it proved to be a carcinoma. There was another small tumor about the same size in the pia on the inferior surface of the left lobe of the cerebellum. I do not think that the latter had anything to do with the symptoms."

These cases have been given, omitting many details, to show the importance of Jacksonian spasm in gross lesions of the cortex, especially in tumor and localized meningitis. In such cases a few features would seem to point with comparative certainty to gross lesion. In these and in a large number of similar cases, other evidences of gross lesion in addition to the spasm were present. They were chiefly monoplegia

or hemiparesis with exaggerated reflexes on the side of the body in which the localized spasm occurred. In most cases close investigation of the conditions of motility and of the reflexes shows this persisting impairment of power and abnormality of reflexes.

So important is this question of Jacksonian epilepsy in the focal diagnosis of brain tumors, that it will be advisable to consider at length the seat and nature of various lesions and conditions producing this symptom. The diagnostician must bear in mind (1) that tumors situated in other parts of the brain than the motor cortex may cause Jacksonian epilepsy; (2) that other lesions besides tumors situated in the motor cortex may cause this form of spasm; (3) that it may occur in toxic and other disease in which no demonstrable focal lesions are present; (4) that a spasm closely counterparting the Jacksonian type may be observed as a reflex or a hysterical disorder; and (5) that Jacksonian epilepsy may be simply an integral part or the entire expression of a case of idiopathic epilepsy.

Jacksonian epilepsy due to cortical discharge may occur as the result of tumors in other parts of the brain than the motor zone. The irritation owing to its intensity, spreads to the motor cortex. It is probable also that in some of these cases unusual instability of the motor cells plays some part. Cases of this kind, in which the lesion is in the cerebrum proper, and absolutely outside of the motor zone are comparatively rare, and the focal diagnosis can only be made in them by a full consideration of the non-motor symptomatology.

These cases in which Jacksonian epilepsy is a so-called distant symptom are not to be confounded with the comparatively common cases in which the spasm is an invasion symptom. A midfrontal or even a prefrontal tumor not infrequently invades caudally until the motor region is grazed or implicated. Jacksonian spasm of typical form showing itself after psychic, graphic and speech disorders have become prominent. In these cases, if the tumor be meningeocortical in position, spasm may precede paresis or paralysis, although sooner or later, in accordance with the amount of pressure or destruction of the motor region the patient will become monoplegic or hemiplegic. Tumors invading backwards from the prefrontal towards the motor region are, in my experience, much more likely to cause Jacksonian epilepsy than those which originate in the parietal lobe and advance forwards. I have recorded several cases of parietal tumor in which the motor cortex and subcortex were invaded and in which Jacksonian epilepsy was not present even at a late stage of the disease. Destruction of the sensor, cortex and subcortex, before involvement of the motor projection fibers or cortex, would seem to give a certain immunity from such spasm. A case beginning and continuing for some time with such symptoms as cutaneous hypesthesia, ataxia of the upper extremity and loss or impairment of the muscular sense and of stereognosis

conception, frequently has paresis and then profound paralysis among its later or terminal symptoms, but this is not often accompanied by Jacksonian spasm.

In some instances, Jacksonian epilepsy, apparently of the usual motor area type, is observed in tumors of the cerebellopontile angle or of the cerebellum. In two cases which have come under the writer's observation, cerebellopontile tumors caused Jacksonian epilepsy or what appeared to be this affection. The first of these cases has been reported in detail by Dr. T. H. Weisenburg.² The tumor sprang from the eighth nerve, and the chief focal symptoms were one-sided deafness, tinnitus, facial monospasm, hypesthesia of one side of the face, nystagmoid movements, slight paresis of the right abductens, and vasomotor and cardiac disturbances. Severe headache, nausea, vomiting and optic neuritis were also present. I examined this patient many times and on several occasions witnessed the facial monospasm which usually showed the same features. In this spasm the mouth was drawn as far as possible to the left and the eyelids were brought together. Only the left side of the face was involved in the seizure. On one occasion it was thought that the facial spasm was accompanied by some spasmodic movements of the left hand, but this was doubtful, and even the observer thought it may have been a voluntary movement.

In a second case seen by me recently,³ one in which a tumor was successfully removed by Dr. John H. Gibbon from the cerebellopontile recess, Jacksonian epilepsy, or at least facial or facio-brachial spasm, was one of the most striking features in the symptom complex. In this case the general symptoms of brain tumor, including headache, vertigo, nausea and vomiting, and optic neuritis with atrophy were present, the chief focal symptoms being deafness in one ear, and on the same side facial and abductens paresis with nystagmoid movements and the spasm above described. In the convulsive seizure the face was markedly drawn to the left, and the spasm in some instances passed to the arm and hand of the same side. Spasmodic attacks occurred at intervals for several months. In at least one or two of them observed before the operation tonic spasm involved both sides of the body.

Some discussion was had as to whether this case could be a prefrontal one involving the face and arm areas, or as it proved to be a cerebellopontile growth. The diagnosis was not as easy as might at first sight appear, as abductens paralysis occurs in tumors variously situated, and at first there was some question as to the central origin of the deafness. Decision was finally given, however, in favor of the cerebellopontile angle, and the operation was the result.

²Weisenburg, T. H. New York Medical Journal, as quoted in The Medical Record, Oct. 1, Feb. 15, 1907. The case is also described in the Medical Record, Dec. 15, 1907. Dr. M. J. Longueville, who saw the patient, reports that the case is a typical one.

³This case was later published in detail by Dr. John H. Gibbon and the writer.

successful which has as yet been performed for a tumor situated in this locality.

Collier⁴ calls attention to two cases in which a tumor of the cerebellum caused Jacksonian attacks. Local convulsion of slow spread and confined to the arm and face was repeatedly observed. Some bilateral spasticity was present in these cases. No lesions except the cerebellar tumors were present, but the ventricles were considerably distended. Hemi-epilepsy is noted by Collier as having occurred in one case of tumor of the pons and in one case of tumor of the cerebellum. General convulsions occurred in other cases. Collier is inclined to attribute the local spasms, in some cases at least, to hydrocephalus. He warns against confounding Jacksonian spasms of ordinary type with Hughlings Jackson's lower level fits. Grainger Stewart and Gordon Holmes⁵ direct attention to this point in the same number of *Brain* as that in which the article by Collier appears.

In considering Jacksonian epilepsy in its relations to the focal diagnosis of a cerebral tumor, the question of spasm due to dural irritation must not be overlooked, especially as certain forms of neoplasm commonly grow from the inner surface of the dura. Convulsion, local or general, due to intense dural irritation may occur as one of the symptoms of a brain tumor situated anywhere within the cranial cavity as has been demonstrated by clinicopathological observation corroborated by physiological experiment. Galvanization or faradization of the dura sometimes causes intense and generalized convulsive attacks. On two occasions I have seen such spasms produced by faradic applications to the dura while tests were being made during operation. The experimental investigations in this field are well known. One point of distinction between cortical Jacksonian spasm and the convulsive affection due to dural irritation is that in the latter the spasm, if observed at the start, will be found usually to begin in the face or limbs of the side of the irritation, spreading however rapidly to both sides of the body; so rapidly that the initial spasmodic phenomena may pass unobserved. The spasms almost always become generalized, and tonic spasticity is prominent. Such spasms are really reflex in character, the irritation being transmitted to the bulbar centers of the same side, and thence to those of the opposite side. In addition to the peculiarities of the spasm just noted, the diagnosis from cortical Jacksonian epilepsy will, of course, have to be made by the other focal symptoms present, as by those indicating parietal, occipital, temporal or midfrontal disease.

In some cases in which tumors grow from the agglutinated dura and pia in the motor region, a confusing picture of more or less generalized convulsions is presented. I have seen such cases in which it was possible, especially

with after-knowledge, to pick out that part of the spasmodic outbreak which was due to irritation of the motor cortex, and that which was dependent on dural irritation.

The nature of the lesion of the motor area causing localized spasm next requires attention. That other lesions situated in the motor cortex besides tumors may cause Jacksonian epilepsy is, of course, well understood, but the fact is not always given as full consideration as its importance demands when the question of operation is under discussion. Decision as to the nature of the irritative lesion is particularly difficult in those cases, not inconsiderable in number, in which such general symptoms of brain tumor as persistent headache and optic neuritis are absent. I have known both of these to be absent in tumors of considerable size, while vertigo and nausea and vomiting have been so little marked as not to direct decided attention to their probable cerebral origin.

The gross lesions of the motor area which cause monospasm or hemispasm, counterparting that produced by neoplasm, are, (1) depressed fractures; (2) localized meningitis; (3) meningeal or cortical hemorrhage; (4) focal hemorrhagic encephalitis or cortical polio-encephalitis; (5) focal necrosis occurring from embolism or thrombosis, including cases associated with generalized arteriosclerosis.

It would, of course, only be in the case of an old fracture of the inner table with slight or no outward evidences of the traumatism, that the mistake would be likely to be made of holding that Jacksonian spasm was due to a tumor. It occasionally happens that an injury to the head which leaves only a small scar in its wake results after a considerable time in the development of Jacksonian spasm. Usually in such cases both headache and vertigo, more or less severe and persisting, are present and a tumor may at first be inferred. Close investigation into the history of the case and as to evidences of injury will usually clear up the diagnosis. A mistake is not necessarily of serious import in such a case, as tumors sometimes develop at the site of old injuries, and in any case operation is indicated for the relief of the lesion causing the irritation. Localized meningitis with adhesions or even an abscess may, of course, occur at the site of such a traumatism.

With regard to localized meningitis not of traumatic origin, and not connected with neoplasm, this is usually of syphilitic origin. The case referred to in which Dr. Hearn operated successfully was one of localized pachymeningitis, or rather of conjoint gummatous inflammation, of the dura and pia arachnoid with exudate of sufficient extent and consistence to constitute a tumor mass. It is in this form of gummatous meningitis, more or less amenable to active specific treatment with mercury and the iodides, that too hasty decision in favor of operation is occasionally given. On the other hand, operation is undoubtedly indicated in some cases with a syphilitic history and with

⁴Collier, James: The False Localizing Signs of Intracranial Tumor. *Brain*, part iv, 1904.

⁵Stewart, T., Grainger and Holmes, Gordon: Symptomatology of Cerebellar Tumors, A Study of Forty Cases. *Brain*, vol. xxvii, 1904.

clear evidences of vascular and meningeal specific disease, but in which the case does not respond even to the most energetic medicinal treatment. In some of these cases occlusion of vessels takes place and deposits become organized so that they cannot be influenced by absorbent remedies, and the lesion, although at first simply an active localized meningitis, becomes an inert and irritating mass which should be dealt with by the surgeon.

Little needs to be said about Jacksonian spasm due to meningeal or cortical hemorrhage in connection with our study of the focal diagnosis of brain tumors. Supradural and subdural hemorrhages are so constantly due to traumatism, and their symptoms so frequently acute in onset, that the spasm which is sometimes present in the subdural variety, and may be largely confined to one half of the body, is not likely to be confounded with the spasm of a brain tumor. The diagnosis will be decided by the history of the case and by the well-known phenomena of dural hemorrhage, such as contralateral paralysis, dilated pupil on the side of the lesion, varying conditions of consciousness, and peculiar changes in pulse, temperature and respiration.

Cortical hemorrhage of slight depth and irregularly distributed sometimes occurs in cases of sinus and venous thrombosis. Horsley* has reported a case of this sort in which Jacksonian spasm clearly defining certain subareas of the motor zone was the most characteristic symptom. In such a case the history of acute or subacute onset, and the symptoms of sinus and venous thrombosis would guide. A hemorrhage or a cyst remaining after a hemorrhage from one of the branches of the medullary artery may give rise to Jacksonian epilepsy and other symptoms simulating somewhat those of a tumor. The diagnostician is usually not called upon to differentiate in such a case until weeks, months or years have elapsed after the original lesion, and as the history is sometimes imperfect or confusing, and as the patients who suffer from such attacks are usually victims of arteriosclerosis, they may have some headache and vertigo, which may be regarded as general symptoms of a neoplasm. Associated with the paresis or paralysis commonly present in such cases, may be recurring Jacksonian seizures. Close study of the clinical phenomena will, as a rule, be sufficient to throw the weight of opinion in such cases against tumor or localized meningitis.

A rare form of cortical disease which causes Jacksonian epilepsy and may be regarded as a tumor of the motor zone in an early stage of its development is focal hemorrhagic encephalitis. Such cases are now and then observed, both in children and in adults. Recently a case of this kind died in my wards in the Philadelphia General Hospital. The patient was an aged woman, who had a number of carefully observed Jacksonian spasms involving the arm and face. Consciousness was retained in the convulsive

attacks. The different parts of the arm and face were usually involved in about the same order. The hand, for instance, was drawn somewhat to the left, and the angle of the mouth was drawn outwards and upwards; the eye was closed and the brow wrinkled, but without any frowning movement or movements of the eyeballs or jaws. Dilatation of the left nostril and movement of the platysma took place. In the spasm the movement was confined to the deep extensors of the fingers and thumb and group of ulnar extensors, there being no movement of the upper arm and shoulder muscles. Examination showed that the patient was distinctly parietic in the left side of the face and arm, but not in the leg. She had no affection of sensibility and the reflexes were not altered to any marked extent. She was probably hemianopsia, although this was not clearly determined owing to the mental condition of the patient.

The necropsy showed many interesting pathological conditions in various parts of the body, including a circumscribed area of hemorrhagic encephalitis in the motor cortex, this evidently having been the cause of the Jacksonian spasm.⁷

One of the forms of focal cerebral disease which must be taken into full consideration when the question of operation, and especially for operation for brain tumor in the motor region, is presented is that of arteriosclerosis which has caused either local instability or local softening with symptoms which simulate those which are exhibited by neoplasms. The cases of this kind most difficult of decision are those in which Jacksonian epilepsy is present. In such a case the history will be that of gradual cerebral failure dependent usually upon generalized arteriosclerosis with its renal and cardiac accompaniments, and a record of seizures and of progressive loss of power of the limbs, or the limbs and face of one side. Instead of the motor manifestations, or in addition to them, the symptoms may be loss or impairment of different forms of sensibility or of stereognostic conception or some disturbance of speech and writing, according to the parts involved outside of the motor region. The patient may have an attack of transient dazing or of vertigo at one time, and at another, with this or independently of it, some form of localized tonic or clonic spasm; the face may twitch on one side or the fingers and hand may be clenched, or the arm may lift or the toe may be extended. Still later this ill-defined Jacksonian attack may merge into a facial, brachial, brachio-facial or hemi-spasm. In brief, the record is one of Jacksonian attacks slowly and irregularly developed to their full stature, usually with late coming on one-sided paresis or paralysis.

Such a case is to be differentiated from one of brain tumor by a close study of the manner in which the symptomatology has developed, by the exclusion of the general symptoms of brain tumor and by taking into consideration the evidences of renal, cardiac and general

⁷ This case will be reported in full in a paper which will be presented at the meeting of the American Neurological Association, to be held in Boston, June 4 and 5, 1906.

*Horsley, Victor. *Ibid.*, April, 1888.

arterial disease. Optic neuritis is practically always absent, and a very skillful ophthalmoscopic examination will often show evidences of sclerotic disease of the vessels and of some grade of optic nerve atrophy. Headache if present is not that which is often characteristic of brain tumor. Nausea and vomiting are generally absent. Examination of the urine may show albumin or casts or both. Dilatation with hypertrophy of the heart is present, and arterial tension is nearly always high. The possibility of the co-existence of arteriosclerosis and brain tumor must not be overlooked.

As in this connection I am chiefly concerned with the discussion of Jacksonian epilepsy, the interesting general subject of arteriosclerosis and focal cerebral lesions will not here be discussed in detail. I have had under observation several cases of necrotic lesion in which the diagnosis of brain tumor was made at some period in the history of the case, and in which operation was performed.

In one of my cases in which the localizing symptoms were astereognosis, diminution in pain and temperature senses, word deafness and word blindness, amnesic aphasia, paraphasia, lateral homonymous hemianopsia and late hemiparesis, operation was performed and revealed an area of necrotic tissue. A study of the history of this case shows how mistakes may be made with regard to what appear to be the general symptoms of brain tumor. At one period a most skillful ophthalmologist reported in effect that while optic neuritis was absent, the conditions present might indicate that it was imminent. Demonstrable neuritis was never present, neither before nor during the several years which intervened before death and after the operation. The patient complained at times of headache, but this was not severe. His first marked symptoms were initiated with an attack of dizziness and numbness, but this dizziness proved not to be the vertigo of brain tumor, but that which is associated with arteriosclerosis and spreading vascular lesions. Nausea and vomiting were not present.

In another case which I saw in consultation with Dr. J. H. W. Rhein, and in which an osteoplastic operation was performed by Dr. A. C. Wood, an area, probably of necrosis, was found situated largely in the motor zone. The patient was a woman fifty-seven years old, whose train of serious symptoms was ushered in by a convulsion. Later she developed recurring aphasic attacks preceded by incoherence, excitement and fright; still later paralysis of the arm and leg and paresis of the face appeared. The reflexes were increased on the paralyzed side, including slight ankle clonus and the Babinski response. Sensation was everywhere preserved. Ophthalmoscopic examination showed moderate pressure signs where the arteries crossed the veins; otherwise the eye grounds were entirely normal. Some albumin was found in the urine, and at one examination one granular cast.

While true Jacksonian epilepsy was not a

manifestation in either of these cases, they belong to the class of cases in which vascular lesions give a symptomatology somewhat closely simulating that of brain tumor. Cases with similar general symptoms and Jacksonian epilepsy are occasionally regarded as tumors of the motor region.

The diagnostician must not lose sight of another class of cases in which vascular lesions occur with brain tumor, but in other locations than that of the tumor.

The occurrence of hemorrhage or necrosis due to thrombosis or embolism, and especially the former, with brain tumor may, as Collier points out, give false localizing signs. He records one case in which operation revealed an area of necrosis which had evidently caused the localizing symptoms which guided in the choice of a site for operation, and in which subsequent necropsy showed the presence in addition of a large tumor. Hemorrhage is not very uncommon in the progress of a case of brain tumor, and may be in, around or at a distance from the site of the growth. The concurrence of vascular lesions with neoplasms is what might be expected when it is considered that tumors are so frequently observed after middle life, and in those who exhibit senile or presenile arteriosclerosis.

Hemi-epilepsy, or Jacksonian epilepsy of smaller range, is sometimes observed as a toxic or diathetic affection. One of the most striking cases of Jacksonian spasm ever seen by me was in a patient suffering from diabetes who had an attack of spasm while consulting me in my office. He remained conscious during the attack and even succeeded in talking a little about his feelings, although he did this with difficulty. The arm and face were the parts affected, the spasm beginning in the distal portion of the limb and extending to the other parts. It is now well known that monoplegias and hemiplegias sometimes occur in the course of nephritis, and in some of these cases necropsy has shown that all forms of gross lesion were absent. A few such cases have fallen under my own observation, necropsy showing no gross lesion. In other cases, however, where the toxic form of uremic monoplegia or hemiplegia was diagnosed, necropsy has shown a hemorrhagic or embolic lesion or local cerebral edema. Uremic convulsions occasionally are of Jacksonian type, and more frequently begin in the limbs or face of one side, the attack later becoming general. Jacksonian epilepsy is also sometimes observed in Korsakoff's disease or as an acute alcoholic manifestation, and may indeed be present in any form of toxic or infectious disease. These toxic spasms need only passing reference in the discussion of tumors of the cerebral motor zone. It is only in extremely rare cases that the diagnosis is not evident, — cases in which the vertigo and headache are present, or in which an optic neuritis of toxic origin is regarded as due to cerebral neoplasm. The diagnosis is, of course, to be made by a study of the history of the case, by examinations of the urine and

blood and by the absence of the typical general and focal symptoms of a brain tumor.

The dural epilepsies which have been considered on the previous pages are reflex epilepsies; in fact, they probably afford the best possible illustration of a severe convulsive attack due clearly to reflex causes. A tumor situated in the dura, or a galvanic or faradic current applied to this membrane, stimulates the sensory branches of the fifth nerve distributed towards its inner surface, and this excitation conveyed to the bulb produces the severe and characteristic spasmodic symptoms to which reference has been made. The broad assertion may be made that peripheral irritation almost anywhere in the body may cause, in rare cases, a convulsive attack, and that this may in still rarer instances assume the Jacksonian type. In such a case, as in the toxic convulsive disorders, the spasm indicates cortical discharge, and it is probable that the occurrence of the attacks is conditioned by unusual inherited or acquired instability of the motor cortex. It is only in a very unusual case that the diagnosis of brain tumor would be considered in such reflex spasms. Some years ago I reported a case of this kind in which the spasm, typically Jacksonian in its initiation and spread, was due to a fibroma of the palmar surface of the hand. The attacks became frequent and severe. They continued for some time after the operation for removal of the palmar growth, but eventually disappeared entirely. The patient was of a neurotic constitution and the intense peripheral irritation in this case undoubtedly affected the unstable cortex. The history of the case and the discovery of the source of peripheral irritation are sufficient to guide the diagnostician.

Some hystero-epileptic attacks bear a close resemblance to Jacksonian epilepsy. The presence of hysterical stigmata and the absence of the symptoms, general and focal, indicative of organic brain disease are sufficient to prevent error in diagnosis.

The question of the differential diagnosis of Jacksonian epilepsy due to tumor or other gross, and possibly operable, lesions of the motor zone from idiopathic epilepsy is one of great moment. Collier goes so far as to say that the commonest cause of Jacksonian spasm is idiopathic epilepsy. In several cases in recent years I have known operations to be done without revealing any tangible lesion, the diagnosis of the nature and site of the lesion having been chiefly made because of the characteristics exhibited by the Jacksonian spasm which was the chief feature of the symptomatology of the case. In some of these cases a small undetectable growth was present in the subcortex or just outside of the limits of the cerebral surface exposed, this being demonstrated by subsequent developments of a second operation or by necropsy. In other cases observation of the patient over a considerable time, as well as a more thorough consideration of all the features of the symptomatology of the case, have made it clear that the Jacksonian

spasm, although apparently typical, was in reality simply an integral part of the attack of true idiopathic epilepsy. In rare instances the idiopathic case shows almost restricted Jacksonian manifestations, at least the spasm continues to be largely a hemi-epilepsy. It is extremely rare in an idiopathic case for the spasm to remain limited to one limb, or to one side of the face, although this is not unknown and patients, as is well known, may have abortive attacks of epilepsy with a sensory or sensorimotor manifestation of a very transient character in a part to which the aura of a completed attack is commonly referred. In some cases in which Jacksonian spasm occurs as a part of the manifestation of an idiopathic epileptic attack, the Jacksonian spasm occurs, so to speak, inside the general convulsion; in other words, the patient during the seizure has clonic and tonic spasm which involves more or less irregularly all parts of the body, but in which the spasm shows itself most pronouncedly in the limbs or in the face and limb or limbs of one side of the body.

Every neurologist has had frequent occasion to confirm the truth of Dr. Hughlings Jackson's well-known opinion that almost every case of idiopathic epilepsy, if studied carefully enough, will be found to have had local spasm as the initiating phenomenon of the general attack. It is true that it is almost impossible in many cases to get a clear record of the initial local spasmodic phenomenon by questioning those who observe the attacks, and even the trained physician or nurse may fail to make this observation largely because of the speedy manner in which the spasm radiates to many parts of the musculature.

In a case recently observed, a convulsive attack began with a somewhat suffused appearance of the face, the head and eyes turning to the left conjointly with a spasmodic movement not very pronounced in the right upper extremity, chiefly affecting the forearm, hand and fingers, which were held in a partially flexed position. The spasm did not, in the attack observed, become entirely generalized, but the left lower extremity was spasmodically extended. It was reported to me that in other seizures the spasms were or became general. In a second case spasm began with a movement performed by the pterygoid and masseter muscles of one side, and facial twitching, the patient becoming unconscious, with generalized tonic spasticity. In a third case the spasm, which soon became general, was in its earliest stage confined to tonic spasticity of the extremities of one side. An opinion in favor of operation was refused in these cases, the evidence pointing to idiopathic epilepsy. With the exception of the localized spasms, other signs of a growth or of localized meningitis were absent. These cases could be easily multiplied, and probably more striking illustrations of initial Jacksonian spasm in cases of idiopathic epilepsy, furnished. I refer to them simply because of their recently having come under notice and because they were under observation for the purpose of a decision with

regard to surgical procedure. Among the operative cases of which I have notes are two in which osteoplastic operations were made by Dr. C. H. Frazier, and to which brief reference might be made. In the first of these cases it is probable that the true solution of the case is that it is one of the idiopathic epilepsy very closely simulating a case of brain tumor with Jacksonian signs. In the other it is probable that sooner or later a subcortical neoplasm, at present small, will appear on the surface or in some position close to the limits of the exposed portion of the cerebrum.

The first of these cases was a man thirty-four years old, many of whose spasmodic seizures were carefully studied in the hospital of the University of Pennsylvania. These attacks usually began with a frequently repeated trisyllabic sound, the patient's head was turned somewhat to the right, his face drawn on this side and the right arm flexed at the elbow. During four or five months before the patient came under observation, he had had a series of attacks, about half a dozen in all, some of which were mild and others severe. The patient knew when the attacks were coming on by a feeling of confusion and dizziness and by a movement of the right forearm, which flexed and extended on the arm. He remained conscious long enough to experience and observe these phenomena. The light attacks passed off without the spasm becoming general. He had on one or two occasions what appeared to be the epileptic status, or at least a series of spasmodic attacks extending over three or four hours, and after one of these periods he remained unconscious for two days. In the severe and recurring attacks the spasm became general, although almost invariably beginning in the same way and always being more marked on the right side of the body.

Examination for all forms of sensation was negative; the grip of the right hand was not quite as good as that of the left, but no other evidences of paresis of the limb were present. Voluntary movement of the right side of the face was weaker than that of the left. The right knee jerk was exaggerated, but ankle clonus and the Babinski reflex were absent. Optic neuritis was also absent, and the patient did not suffer much from headache.

Operation was performed in this case, an osteoplastic flap being made over the midfrontal and the lower two thirds of the motor region. No lesion was discovered except that the dura seemed unusually thick and dense. This patient had a specific history, and the question of a gumma or gummatous meningitis was considered, but in the light of the operation and with the history which has only been briefly sketched, the case may have been one of idiopathic epilepsy. Of course it is possible that a subcortical prefrontal growth developing backwards may later be revealed.

The second case was that of a man thirty-two years old, of healthy appearance, without any history of specific disease or alcoholism. He said that he had been perfectly well until four weeks before he came to the hospital, to which he was referred by Dr. M. H. Fussell, under whose care he had been as a private patient. Some three months before his admission he had given himself a sudden strain in attempting to get on a moving car, but otherwise had no history of injury. Four weeks before admission he noticed for the first time feelings of numbness in the thumb and finger of the left hand immediately followed by twitches of the left eyelid. Later he began to have frequent attacks of localized spasm which affected the left upper extremity alone, the left side of the face alone

and both the left side of the face and the left upper limb. These were observed by various members of the neurological staff. The patient kept an account of his attacks which became very frequent before the operation. He remained conscious in them and described the peculiar sensations felt by him and would often detail the manner in which the attack was progressing, saying, for instance, "Now it is in the fingers, now in the arm, now in the eyes, now in the face," etc. The spasm was distinctly Jacksonian, being either brachial, facial or faciobrachial in form. In one of his seizures the patient first complained of numbness of the thumb and index finger of his left hand. In a few seconds a distinct twitching of the left side of the occipito-frontal muscle was noticed, followed quickly by movements of the orbicular and levator palpebrae, and next by movements of the left side of the mouth and face. Finally the right occipito-frontalis took part in the spasm. The patient remained conscious, and in this spasm no part but the face was affected.

In another seizure first a fine clonic spasm of the thumb and forefinger was observed, quickly followed by supination of the hand and forearm, flexion of the hand on the forearm, then by biceps, anconeus and deltoid spasm. When the spasm began to affect the flexors of the forearm, the left occipito-frontal and the left side of the face became involved also after the manner described in the previous notes. At the close of the main attack movement of the subscapular muscle could be distinctly felt, although not observed during the main attack. No movement of the eyeballs was observed. At no time during the attack was the patient unconscious. Many other attacks were observed, these recurring with great frequency, even as often as twelve or thirteen times in one day. In all either facial or brachial spasm or both were present, the details of the twitching differing considerably as regards the movement of the musculature involved, especially in the upper extremity. I had the opportunity of showing a portion of one of these attacks at one of my clinical lectures, the patient walking into the arena during the seizure. The occipitofrontal, orbicular and facial movements were still evident as he entered. The spasm in the arm was passing off, but the hands still slowly flexed and extended, the forearm being held semi-flexed on the arm.

Examination showed some slight general weakness of the left upper extremity, and in the thumb and fingers marked impairment of power. Weakness was marked in pronation and supination and in flexion and extension of the hand and fingers. Extension of the second and third phalanges and flexion of the first phalanx of the index finger were almost lost. He was unable to oppose the thumb to any of the fingers or to abduct the thumb. The musculature of the left arm was distinctly flabby as compared with that of the right, and slight wasting of the muscles of the left forearm was evident. Movements of the fingers and hand were awkward, and attempts to make the finger to nose test caused some coarse tremor of the hand. The muscles affected by the spasm in the left side of the face, like those of the upper extremity, showed some impairment of power, but this was not marked. The deep reflexes in the left upper extremity were exaggerated.

Other parts of the body than the left side of the face and left upper limb showed no abnormal conditions although the knee jerks and deep reflexes generally were rather over-prompt. No loss of cutaneous sensation was anywhere present, and the patient was not astereognostic. Hemianopsia was absent, as were also all disorders of ocular movements. Repeated

examinations of the fundus showed no optic neuritis, although some blurring of the disk was present. The patient complained at times of dull headache, but pain in the head was not that characteristic of a brain tumor. It was decided, however, that the symptoms probably pointed to a small growth in the cortex or subcortex of the arm and face areas.

Dr. Frazier performed an osteoplastic operation, uncovering the arm and face areas in the usual manner. No tumor was found. At one spot the coloration of the surface seemed somewhat lighter in appearance but incision here revealed nothing, and it was decided not to explore the subcortex any further. The patient made a good surgical recovery. He had a few left-sided spasms during a day or two after the operation, but these ceased, and at the time of writing, between six and seven weeks after the operation, he had had no recurrence of them. The arm is, however, considerably more paretic, but it has improved in this respect since the first few days.

This case seemed to present in almost every respect the characteristics of a small gross lesion, and it is not improbable that a subcortical tumor will eventually make its appearance on the surface. The case is similar to one which came under my notice at the Philadelphia General Hospital in the service of my colleague, Dr. Win. G. Spiller, and which will later be published in full by Dr. Spiller and Dr. Edward Martin who operated. This patient was a man sixty years of age who had had convulsions confined to the left side for eight years. The spasm implicated the left upper and lower limbs and left side of the face, and the face and eyeballs were drawn to the left. The attacks had become more severe during the past four or five years, and five were observed by Dr. Spiller within an hour. An operation was performed and a peculiar appearing area was uncovered, but it was not distinctly pathological. The patient died two days after the operation. A very small sarcoma was found in the right second frontal convolution, just in front of the pre-central convolution and immediately beneath the cortex.

Just as this paper was approaching completion an article by A. Playce on minor (smaller) motor epilepsy appeared in the *Neurol. Centralbl.*, Nos. 3, 4 and 5, Feb. 1, Feb. 15 and March 1, 1906. The author contributes the history of a case of a boy eleven years old at the time of the first observation. At this time the diagnosis of facial tic was made. Some years later the patient again fell under the attention of Playce when the diagnosis of abortive epilepsy was made, and still later it became clear that the case was one of ordinary idiopathic epilepsy with the minor or local seizures being similar in character to the Jacksonian attacks which are observed to occur during the progress of a true idiopathic convulsion. The not very extensive continental literature of the subject of Jacksonian epilepsy is reviewed by Playce, especial attention being given to articles by Léré,* Binswanger†

Burnhardt,¹⁰ Sarraillhe,¹¹ Liebert¹² and Kjelmann.¹³

He defines smaller motor epilepsy as that form of attack in which a local spasm occurs without disturbance of consciousness and without an aura. The differential diagnosis of hysterical attacks, reflex spasms, seizures due to cortical lesions and idiopathic epilepsy is considered at some length in the light especially of the valuable contributions of Binswanger and Léré. In connection with what has been said in this paper, the conclusions of Léré, that cases of so-called tic are often in reality of epileptic nature, are of interest. Cases are cited to demonstrate the truth of this position. So-called attacks of myoclonus probably occur in about 5% of the cases of idiopathic epilepsy. The reader is referred to the paper of Playce and also to the contributions of Binswanger, Léré and others for some interesting points in the diagnosis of Jacksonian epilepsy and its counterfeits.

A few of the differential points brought out by these writers might be presented here in addition to those to which attention has been called in previous pages.

The aura in idiopathic epilepsy is not as common as that occurring in organic epilepsy and in those cases of epilepsy due to reflex causes. Idiopathic epilepsy is liable to occur at night; true tics and hysterical attacks scarcely ever at night, although one or two cases are noted in the literature in which severe cases of tic were said to have occurred at night. Reflex epilepsy and true Jacksonian attacks may occur at night. Léré and Binswanger believe that idiopathic epilepsy may be of organic origin and that Jacksonian attacks may be only part of the idiopathic attacks, a point which I have already somewhat fully considered. Jacksonian attacks do not come on as often at night as do the idiopathic attacks.

Léré states that in Jacksonian or cortical epilepsy the patient is always awakened from sleep so that he is compelled to be awake during the whole attack; in idiopathic epilepsy the patient is only awakened from sleep in those attacks which, during the day, would not cause him to lose consciousness.

An important symptom of minor motor epilepsy is more or less paralysis of the part after an attack. This occurs most often after cortical or organic epilepsy, but cases are on record in which after a reflex or idiopathic attack this has been present. The paresis may be overlooked, as it may last only a few minutes after the attack. At times instead of the convulsion the epileptic attack may be manifested by weakness, temporary in character, and this may occur without loss of consciousness. Instead of paresis there may be sensory changes as diminution of the visual fields and distortions of cutaneous sensation.

*Léré, *Revue Neurol.*, 1901, 8, 111, also *Epilepsie et tics*, 1903, Paris, 1800, Alcan, 8, 101.

†Binswanger, *Die Epilepsie in Nothnagel's Pathologien Therapie*, xii, 8, 118.

¹⁰Burnhardt, *Lehrbuch der epilepsie*, 1901, Berlin, 1901, 10, 11.

¹¹Sarraillhe, *Revue Neurol.*, 1901, 8, 108.

¹²Liebert, *Lehrbuch des Wahnwahn*, 1887, 8, 10.

¹³Kjelmann, *Revue Neurol.*, 1901, 8, 10.

The wound should be closed with silkworm gut or chromicized catgut sutures, excepting at the point where A, B and E meet. This is a crucial point for the avoidance of sepsis and non-union, and for that reason a silver wire suture is used. By placing it as depicted in Fig. 1, the corners can be fitted to a nicety without cutting off their circulation.

After finishing the operation for cystocele, a *perineorrhaphy* should always be done, even in cases of recurrent cystocele where the perineum

dairymen do not object to but rather favor the enforcement of reasonable milk laws and ordinances as they see the advantage of preventing dishonest practices. Official records show that where reasonable regulations are enforced, the amount of milk used is large as compared with the amounts used in places having poor or poorly enforced laws. But the best dairymen would like to see milk regulations clearly stated and dignified by being separated from other municipal regulations relating to garbage, cemeteries,

CYSTOCELE GRAVES



Fig. 1. The cystocele with suture.



Fig. 2. The result of perineorrhaphy.

with the composition of milk unless the most serious conditions exist. The great majority of dairies sending milk into our cities are never regularly inspected and conditions must become exceedingly bad before they are noticed.

It should be understood that well-meaning

for well people.

III. The milk commission can exert the third important influence. These commissions have received much credit but not as much as they deserve. I believe the value of the commissions should be extended and they should receive support for their work from the public treasury. In the end they accomplish much that the regularly

* Paper read before the Suffolk County Medical Society, Boston, Mass., Dec. 20, 1905.

AN OPERATION FOR CYSTOCELE.

BY W. P. GRAVES, W.D., BOSTON.

OF all the plastic operations on the vagina, the most difficult in which to attain a permanently successful result is that for cystocele. Numerous ingenious operations have been devised and exploited, but after all has been said, the perfect operation which in all cases can be relied upon has not yet been invented. However, many of the difficulties and disheartening results which attend the treatment of cystocele can be avoided

exist above it, as it is sure in time to stretch out the external portion of the repaired perineum.

No particular originality is claimed in this operation, as it combines and modifies principles long ago described by Dr. Emmet.

The steps of the operation are as follows: Two points are selected on each side of the cystocele, about one-half inch from the lateral creases, which, when drawn together (A to B and C to D), sufficiently reduce the cystocele and at the same time do not exert undue tension on the lateral flaps. With these four points as corners a rectangle

repaired perineum, and, secondly, as starting points for a new cystocele, according to the principles of any beginning hernia. The most important protrusion to reduce is the somewhat loosely-called urethrocele. This consists usually of an hypertrophied tab of vaginal tissue, and in operations for perineorrhaphy should always be reduced even in cases where cystocele does not

backward a cervix which has a tendency to prolapse.

Great care should be exercised in making the denuded figure symmetrical, so as to gain perfect approximation of the edges, for in all vaginal work it is the perfect approximation of the edges of the wound which avoids sepsis and secures union by first intention.

The wound should be closed with silkworm gut or chromicized catgut sutures, excepting at the point where A, B and E meet. This is a crucial point for the avoidance of sepsis and non-union, and for that reason a silver wire suture is used. By placing it as depicted in Fig. 1, the corners can be fitted to a nicety without cutting off their circulation.

After finishing the operation for cystocele, a *perineorrhaphy* should always be done, even in cases of recurrent cystocele where the perineum has been previously repaired. A firm perineum should be done and one which will hug closely the anterior wall. Stitches from the cystocele operation may be removed as soon as the perineum is strong enough to stand the traction of a speculum, usually about the third or fourth week. Daily corrosive douches should be administered, great care being exercised not to allow the corrosive solution to enter the urethra. The patient should be encouraged to pass her water as soon as possible, in order to avoid the continued use of the catheter.

SOME INFLUENCE IN FAVOR OF BETTER MARKET MILK.*

BY R. A. FARMON, ITHACA, N. Y.,
Professor of Dairy Industry, Cornell University.

IN dairying, as in many other lines of industry, there is to-day a decided movement for improvement. This improvement is chiefly in the direction of more sanitary methods of producing and handling milk. Several different influences are responsible and I propose to mention and briefly discuss some of the chief ones.

I. Laws and ordinances. Most states have laws relating to milk and most cities have ordinances on this subject. These legal regulations usually prescribe standard or minimum amounts of fat and total solids. Three 3 per cent fat and 12 per cent total solids is the most common standard, but in Massachusetts the standard is a little higher. So far as this milk standard is concerned, the laws and ordinances are generally well enforced. It is easy to enforce such provisions because they are definitely stated and failure to comply with them may be easily traced. Legal regulations usually apply also to the sanitary conditions under which milk is produced and handled; these include the health of the cows, manner of stabling, character of feed, handling of the milk, etc. Obviously it is difficult to state requirements relating to these subjects as exactly as those relating to composition of milk, hence such requirements are not as well enforced. In fact, in many cases no attempt is made to enforce regulations other than those having to do with the composition of milk unless the most serious conditions exist. The great majority of dairies sending milk into our cities are not regularly inspected and conditions must become exceedingly bad before they are noticed.

It should be understood that well-meaning

dairymen do not object to but rather favor the enforcement of reasonable milk laws and ordinances as they see the advantage of preventing dishonest practices. Official records show that where reasonable regulations are enforced, the amount of milk used is large as compared with the amounts used in places having poor or poorly enforced laws. But the best dairymen would like to see milk regulations clearly stated and dignified by being separated from other municipal regulations relating to garbage, cemeteries, and like subjects and, more important, they would like to see these regulations enforced by men who have been trained to do such work and not those who are appointed merely because it is the wish of some politician. A dairy inspector who has been well-trained for such work may often accomplish more good by giving advice where it will be useful than by his detective and police work.

Furthermore, dairymen would heartily approve enactment of new laws that would relieve them of much trouble and loss and of much blame, now unjustly heaped upon them. These would include laws relating to the care of milk bottles and, more important, the condition of milk cans when returned by dealers to dairymen. And dairymen would welcome laws that would prevent dishonest competition, such as is seen when one dealer having poor milk succeeds in getting trade by making grossly inaccurate claims.

II. The second influence is public demand for purer milk. This is increasing slowly. If the public were anxious to get better milk than they are now getting they could have it very soon, but the fact is that the great majority is satisfied with the present milk supply. If the milk going into most houses contains a fair proportion of cream and will not sour in twenty-four hours it is quite certain to give satisfaction. The purchaser gives little or no thought to its condition otherwise than stated. Perhaps the average householder can be excused for this neglect on the grounds that she innocently believes the milk inspectors will protect her from unwholesome milk. But can we excuse the hospitals and other large institutions on the same grounds? Their position seems remarkable to say the least. These establishments are managed by men who know the real conditions, yet most of them buy their milk on contract with no stipulation whatever as to quality. It is of course understood that the milk shall be sweet and contain at least the legal standard of fat. Most consumers and dairymen will say if the ordinary milk is good enough for the patients in hospitals where there seems to be no lack of funds for expert treatment and wholesome food, then that same milk must be good enough for well people.

III. The milk commissions constitute the third important influence. These commissions have received much credit but not as much as they deserve. I believe the value of the commissions should be extended and they should receive support for the work from the public treasury. In the end they accomplish much that the regularly

* Paper read before the Suffolk County Medical Society, Boston, Mass., Dec. 20, 1905.

organized officers of milk inspection are expected to do and on these grounds alone it seems they should not have to rely upon private support. The benefits of milk commissions could be easily increased at least by a little dignified advertising among physicians and perhaps among the public. It is strange that even now many physicians who claim to be interested in better milk and who reside in cities where milk commission are doing good work, do not know about these commissions.

IV. There are several other influences in favor of better market milk, but the last to be named, and perhaps the most important, is the example of well-conducted dairies. By contrast with poorly-conducted dairies, these places have emphasized the value and the attractiveness of pure milk as nothing else could do. They have often been run at a loss because of the extreme measures taken to prevent contamination of milk, but they have succeeded in reducing some of these extreme measures to practical methods that can now be followed in all dairies and thus they have rendered valuable service to the dairy industry. If one doubts the power of example in this case he should visit almost any high-class dairy of to-day and he will be likely to find that some person or persons connected with that dairy have visited and obtained valuable help from other high-class dairies previously established. And a good feature is that proprietors of these places like to be visited and have their successful methods copied because every new dairy of this class does more to advertise their kind of milk and increase general demand for it.

Thus we have considered, briefly, four of the chief influences in favor of better milk. It seems to many persons that these should operate more rapidly but there is a serious drawback. It is the unwillingness of the majority of people to pay even a small advance for improvement in the quality of their milk. The dairyman is a business man. He may be compared with the manufacturer. He will not willingly increase the cost or labor of producing milk so long as he can receive no more for it. If milk consumers could be made to appreciate the hard work which is done on the average dairy farm, and the heavy cost for feed and the small returns now being received, then it might be easier to increase prices.

Most dairies should have considerable money expended upon them for better equipment, but great improvement in quality of milk could be brought about by the adoption of more careful methods of work. This, however, means a higher class of help or closer supervision which amounts to the same as cash outlay.

One who has not been engaged in the production of sanitary milk nor given close attention to it can hardly appreciate the high degree of intelligence required for this work. It is a battle with bacteria and this means the utmost care at every step. Carelessness at one point will cause bad results. Sometimes experts have to be called to assist in finding mysterious sources of contamination. The man possessing skill sufficient to

produce clean milk can usually find more profitable employment in some other line of work, than in making milk at present prices. If the public wants clean milk he will gladly produce it for a fair price.

[The above paper was followed by an exhibition of lantern slides showing the extreme care required in the production of sanitary milk and arguing for higher prices which will encourage producers to follow better methods.]

A CONSIDERATION OF THE TREATMENT OF AUTO-INTOXICATION OR AUTO-INFECTION WHERE THEY ARE THE CAUSE OF MENTAL DISTURBANCE.

BY L. VERNON BRIGGS, M.D.,

Physician to the Mental Department of the Boston Dispensary.

(Continued from No. 16, p. 434.)

CASE VIII. April 7, 1904. F. B. A. Male. Single. Age, thirty years. Patient as a boy was subject to severe pains in abdomen. Has had more or less dyspepsia all his life. Is nervous and irritable. When he feels well is careful about his dress but says he does not "care a rap" about it when he is not feeling well. Has been under Dr. Pfaff and Dr. Gannett for stomach. Much depressed at the present time. Does not care whether he lives or dies, but acknowledges that he would struggle against death.

Sentences rather slow and retarded. Pulse 58 and sluggish. Belches gas frequently. Much gas in bowels and stomach enlarged. Knee jerks exaggerated. No ankle clonus. Plantar and abdominal reflexes diminished. Pupils equal and react to light and accommodation. Romberg position and co-ordination, fair. Has smoked and used coffee in excess. Family history negative.

Treatment: Prescribed nux vomica before meals. Glyco-thymoline after meals. Restricted diet.

June 1, has improved but condition not satisfactory. Advised his going on a ranch, since which time I have heard only once from him. He had not then improved.

CASE IX. June 6, 1904. M. E. P. Female. Single. Age, forty years. Referred by Dr. Mary Hobart, who has had charge of the case for several years. Mother died of heart and stomach trouble. Father had shock many years ago. Sisters delicate and subject to headaches. Brother committed suicide.

Patient has pains all over her body. Is unable to ride in electric cars because they "affect her so." Comes to my office in a carriage from D — and says she will have to go to bed for several days after taking such a trip. Pulse 152; temperature 101.

Gives her history as follows: "First they say I was not born with strength enough. That my mother really ate nothing to speak of before I was born. Next, I had bronchitis as a baby and was seriously ill. Then lung fever; after that whooping cough. Then I fell down a long flight of stairs and struck my nose. My stomach was always delicate. Then I was sick with the measles and was kept in a dark room for my eyes which were weakened. Always read books that few children would care for. Next I fell from a barn loft and had constant backache, headache and sideache, which started in immediately afterwards so that I had to give up my music. The doctor thought there was some local trouble.

"At school took seven subjects when the course was four; also lectures by the best foreign lecturers and

Harvard professors. Went to all the dancing school parties and everything worth while at Harvard. Was very sick every time I was unwell which only came once in months for many years. When I walked or danced the pain was intense. Kept running down but never went to bed until finally I vomited everything I put in my stomach without nausea.

"First, I had chronic diarrhea and constant trouble with the bladder, getting up some nights thirty times. Finally I had paralysis of the muscle of the bladder and my urine passed all the time for three months. Then I had hemorrhoids. When I dropped into bed, I vomited fifteen weeks steady, and most of the time for two years. The doctor gave me up when I threw up blood and the lining of my stomach. They kept me alive with brandy and oil on the outside of my stomach. I had nervous prostration.

"They made a local examination and said I must wear a support, and that every time I was sick the suffering must be as bad as an obstetric case. I have had Dr. Doe for prolapsed ovary and electricity, and Dr. Strong has operated on me. Have had Dr. F. H. Harrington, Dr. Mary Hobart, Dr. Holmes who operated on my nose, Dr. Samuel Hopkins for my jaw, Drs. E. G. Cutler and Fred Shattuck for my stomach and Dr. C. F. Folsom for my nerves, besides other physicians; in all I have had fifty-two."

Treatment: March 21, 1905. I had patient come in and take a room near my office, as treatment could not be carried out at her home. I gave her glycyrrhizine two teaspoonfuls t.i.d. with meals. Beta naphthol 5 gr. twice daily two hours after meals. Colonic flushings of saline solution daily. Colomet at night. Generous diet. Salt baths of from twenty minutes to half an hour before retiring. Pulse varied during the day from 96 to 140. Temperature 99.8 to 101.

March 28, patient went out for a walk for the first time; complained much.

March 30, out for two hours, one spent at a picture gallery. Is now taking beside her three regular meals, 3 eggs, 3 cups of soup and 3 glasses of milk.

April 4, was out for a walk in the morning of two hours, visiting the Art Museum, and in the afternoon for one hour, during which time she made her first call for several years.

April 7, Goes out daily visiting the art galleries, calling, etc. Is eating and sleeping fairly well. At this time as I was going away I was obliged to send patient home with directions as to her treatment, which included the antiseptics. Those directions she followed until June, when she said she was unable to continue them.

Feb. 1, 1906. Is now in very much the same condition as when I first saw her, having had no treatment by any physician since last spring. This case improved while under treatment.

CASE X. Jan. 15, 1905. W. R. L. Male. Age twenty-six. Single. Mother died of paralysis at forty-one years of age, when patient was six years old. At thirty-nine she had hemiplegia. Was at time out of her head, especially during menstruation. Father clergyman, strong physically but sensitive to outside suggestion and environment. Paternal grandfather died of general debility at sixty-seven. Paternal grandmother of consumption at twenty-five years. Maternal grandfather died at eighty of old age. Grandmother also died of old age. One paternal uncle's "mind was clouded for a time." One great aunt was peculiar. An uncle drowned himself after a long period of insomnia. Patient had violent crying and screaming spells as a child which came on with no apparent cause, but was quoted by his father's de-

him in his arms. At seven he had gastric fever. At eight, scarlatina. At ten, while jumping on the bed, fell on the floor striking on his head; there was no loss of consciousness, but a queer feeling which lasted for some time. At fifteen he had a mild attack of typhoid fever. The same year he entered a school at G— where he did very well and took a Latin prize. At nineteen, he entered Harvard, and while there was substitute on the eleven and class crew. He was fond of bicycling.

He worked very hard and completed the course for an A.B. in three years. He failed the following year to get his A.M. and it was then noticed that he had become somewhat "scatter-brained." He also became unmethodical and careless about his clothes. This condition however did not prevent his taking the position of instructor in languages at the G— school in the fall of 1901. The head master of the school wrote his father that he had a wonderful gift in managing boys. At the end of six months he again wrote patient's father that he was not up to his work. Patient said at this time that his head felt badly, and it was noticed by those out late at night that he was apparently asleep at his desk with the light burning at three and four o'clock in the morning.

His appetite increased and he became critical. In January, 1902, it was noticed that he was unusually emotional at the marriage of a friend. He seemed unable to concentrate for any length of time or to satisfactorily accomplish his work. It was therefore suggested that he should go abroad with a tutor.

Accordingly, in August, 1902, he went to Germany. He did not appear able to apply himself but he picked up a good deal of German. His letters at from this time became erratic and somewhat confused. When the time came for him to return he for some reason did not do so, and it was necessary to send a relative to bring him home; he would not consent to return until after a trip to Italy. Before leaving Germany he had some operation performed on his nose which he says the doctors told him was to get the blood from the brain.

He returned to this country in September, 1903, and was met by his father who found him very morbid and over-conscientious and worrying over something he did in college, saying he never should have been allowed to graduate. Said he had let someone look over his paper and use some of his work and he so exaggerated this fact in his mind that he refused to matriculate in the University in Iowa because he said he had not earned his degree honorably.

In January, 1904, he was taken to Dr. McParney who referred him to Dr. Dana, who after seeing patient for two months gave a bad prognosis and advised an asylum in England. The patient was then taken to Dr. Bangs, who was associated with Dr. Peterson in New York, who advised patient to live an out-of-door life with a companion and away from his family. About this time he was very slow mentally and had a nervous smile which had developed abroad, and his judgment was impaired.

A little later he was taken to Dr. Wheeler, an Osteopath, where he apparently improved for a time, but in May the osteopath considered him a case for a mental specialist.

On May 24, 1904 at the suggestion of Dr. Joel E. Goldthwaite, patient was referred to me. At the time of my examination I found no dizziness, no insomnia, appetite normal, eating hearty meals and also between meals. Little tremor of the hands and tongue. Bowel position good. Keen, gets along well. Pulse 104, temperature 99.6, healthy strong, good. Delusions of self accusation and possibly some latent delusions. Several times during the examination

tion he went to the front door, which was some distance from the examining room, saying he wanted to get some fresh air. No loss of weight; rather gain. Speech and ideas retarded. Memory for names and events good; not so for dates. Laughs at times, not out loud, but something more than a smile. Considerable negativism. Patient says he had dull sounds in his ears in January. That his occupation should be manual because his head leads his hands. That things come to him in an abnormal way which causes feelings of mirth, and that he laughs because he cannot see the logical proportion of things. At later examination he showed unmistakable symptoms of dementia praecox.

Gave glyco-thymoline, 1 dr. t.i.d., regulating his diet and exercises. I was unable to go far in the treatment as in June 1904, he developed a dislike for me, caused by opposition, and Dr. C. F. Folsom was called in consultation.

He thought it useless at that time to continue treatment where the opposition was so strong and the case was placed in the care of Dr. G. F. Jelly, for the balance of the year, the patient living an outdoor life in the mountains.

In the fall of 1904, patient attacked his cousin on the street and also interfered with people whom he heard swearing or doing things he thought they should not do. At Christmas time, he was allowed to go home but he did not do especially well. He took twenty-five minutes at the station to transfer a few articles from his trunk to a bag. Requested his companion to walk at a certain distance from him and no further; not to sing or hum and to pass on a certain side of the trees and pillars. Made such remarks as "S. is full of subtle influence—keep walking—when you see people rubbing things walk." Was very forgetful, undecided and self-willed by turns. His friends considered his character as passing away and said it was like watching a soul die.

About this time, Dr. Weir Mitchell was consulted and advised placing the patient in a sanitarium as he considered the case virtually hopeless.

About Jan. 1st, 1905, patient was sent south with a graduate physician as companion. On the way patient lost his money belt and contents. Later while at the hotel in Asheville, N. C., patient locked the door, having accused his physician of taking the money, and proposed to settle the matter by boxing, which the physician refused to accede to. Patient then caught him by the throat and being the larger and stronger was choking him when his cries brought assistance.

Dr. S. Westray Battle, of Asheville, was called in and advised the patient to put himself under the immediate charge of Dr. Robert S. Carroll at his home in Asheville, where patient could have the benefit of a hydrotherapeutic treatment and sanitarium care without the objections of a sanitarium. Patient acceded to this proposition and entered the family of Dr. Carroll.

Dr. Jelly at this time being away for his health, I was asked to again resume the case which I did on Jan. 20, 1905. Dr. Carroll agreeing to co-operate in carrying out my prescribed treatment, which consisted of eliminating baths, including turkish and cabinet baths and spinal douches, colonic flushing with salt solution daily, salt baths of thirty minutes each at bed time. Beta naphthol 5 grs. after meals and restricted diet with long walks, sloyd, etc. For the first ten days patient was violently excited and as Dr. Carroll writes, "thoroughly insane, savagely attacking his physician and attendant and having to be fed by tube." At the end of the ten days he cleared up mentally and on the 20th of February, was taking long walks out of doors with his attendant, which he seemed to enjoy.

During March, glyco-thymoline, 2 dr. before meals,

was given and mainly liquid diet. Patient had some hallucinations of sight and smell; said his food was dirty; was also very decided in his statement that other people were crazy and must be taken care of. Also had delusions against women in general, which were so strong that he would try to get out of the window when the female nurse came around in the morning to make up his bed. Also thought his physicians were not honest, or that they were immoral or insane.

In April phosphate of sodium after meals was given to replace the beta naphthol, and from time to time since then his treatment has only varied in the kind of antiseptic given, no one kind being given over three or four weeks without changing. Twice he has received iodide of potassium for limited periods.

During the spring he had expressed delusions against his aunt and also as to horses and other things. In spite of this he apparently improved in many ways being able to accomplish work begun, such as making book shelves, and the drawing of landscapes. He played a good game of ball; bowled a good string and enjoyed services in churches, amusements and lectures.

In April, I visited him and was cordially received. Patient voluntarily consented to continue under my care for an indefinite period, invited me to lunch, etc. He did not wish to go to walk with me, the reason he gave was that he feared my professional zeal would lead me to attempt some method which would cause trouble between us. There was much mental deterioration and impairment and undoubted damage to the brain.

His idea of Russian and Japanese war consisted mainly of a lot of proper names which he repeated in a slow, dragging way. He confused "law" with "lawn" and other words in the same manner. Also in speaking of some one falling he said, "Niagara Falls," "Bellows Falls," and named over other falls ending up with "That's what you mean, isn't it?"

Treatment was continued during the summer and many trips taken through the mountains with attendant, patient walking fifteen and twenty miles a day for a week or more at a time; building their own camp fires, stopping at farm houses, fishing, etc., but at no time during those trips was the antiseptic treatment, including the colonic flushing, interrupted, except the latter, when camping out of doors. The violent outbreaks which occurred periodically disappeared, and he has had but one slight one since last summer.

In March and April the improvement was slow, but noticeable. In May, when several of his relatives visited him, his delusions were still prominent.

By August, his delusions had faded so that he did not express or give evidence of them. His complexion which was muddy and full of pimples had cleared, blood pressure was diminished, and the indician, which was quite in excess at the beginning of the treatment, was normal. The antagonism and negativism were slight, and Dr. Carroll reported, on the whole, general improvement.

On June 30, his father after a ten days' visit with patient, during which time they took a mountain tramp of several days, writes, "I was most agreeably surprised at my son's condition. He is very natural, reasonable, and said nothing whatever against any one; was affectionate toward me, and his mind seemed stronger and less clouded; also he manifested fewer delusions."

On October 8, his father after another visit in which they were again off together, part of the time alone, writes, "I am glad to say I have not seen him so well, so reasonable and so gentle as he is for years, and I think there is real improvement."

My opinion was that the progress of the disease had

been stayed, but considering the fact that we have no way of replacing damaged brains, this perhaps is all that could be accomplished. I therefore wished a consultation to decide whether the elaborate and rather expensive treatment was warranted in view of the slight improvement which might occur. I suggested to the father a consultation with Dr. Edward N. Brush, of Baltimore, which was assented to. Desiring Dr. Brush to have every opportunity to observe the case, I asked him to take the patient into the Sheppard and Enoch Pratt Hospital temporarily, which he kindly agreed to.

On Nov. 10, 1905, patient was brought to Baltimore and placed in Dr. Brush's charge. During his stay at the hospital he was very quiet, tidy in his habits and acted in a gentlemanly way toward all, with whom he came in contact. He was slow in his actions and speech and frequently in conversation would stop for a few moments before finishing a sentence. He was very prompt in asking for his medicines and treatment, if he thought they were neglected in any way. Was amenable to discipline. Liked to go for long walks. Ate slowly, but a great deal. Was fond of using big words and would put several words in a sentence with a sort of rhythmic ending; frequently used wrong words.

Since returning to A. — the treatment has been kept up. On December 30, Dr. Carroll reports that the patient seems much improved. That he was very active in Christmas preparations, getting holly trees and evergreens and making many presents.

Jan. 26, 1906, Dr. Brush writes: "I am fully of the opinion, based upon the history of the case and our observations here that your patient is one of those unfortunate cases of early mental breakdown, to which the term has recently been applied, 'dementia precox.' There is certainly, as I think would be generally admitted by those who know him and see him now, a large degree of mental reduction. He is somewhat over impulsive as is rather characteristic of those cases and his outbreaks of excitement and violence are of a purposeless and childish kind, characteristic of this type of mental disturbance. I do not think we have far to go in seeking for the cause, even leaving out any prenatal elements. Overwork at an important period of his life associated with undoubted auto-toxic processes, would, I believe, tell the story. I feel that the course which you have pursued in the case since he has come under your direction is by far the most judicious that could be suggested. If there is any hope in his case at all, and it strikes me that there is very little to be expected in this line, it is in preventing further mental deterioration and this would only be done in getting him interested in manual rather than mental occupation."

All I claim in this case is that the energetic antiseptic treatment which has been so faithfully carried out by Dr. Carroll has stayed the progress of the disease, and has enabled the patient to enjoy a simple and quiet life.

I will add an extract from Dr. Carroll's last letter dated Jan. 27, 1906: "Patient is very genial and kindly. We all hear Sousa's band to-night, to which he looks forward with great interest. His physical condition is as good as I have ever seen and I think he is now free from any tendency to small obstacles that at any time."

In the treatment of these cases we must remember that much of the repair of the system takes place during the hours of sleep and it is therefore

necessary that at no period of our life, should we neglect our hours of sleep. No one has gone into this subject so thoroughly, or is doing more good to-day for the young minds and bodies that have neglected the hours of rest than has T. D. Acland, M.A., M.D., Oxon., F.R.C.P., Physician to St. Thomas' Hospital, London, etc. On May 11, 1905, he read a paper before the medical officers of Schools Association on the hours of sleep at public schools, in which he says, "It is generally held that an average of about eight hours' sleep is right for adults after they have obtained their full development and during the best years of their active work. Some, of course require less, and a few, more." He gives most interesting tables showing the approximate hours of undisturbed rest in forty English public schools, and quotes Prof. J. G. McKendrick, M.D., F.R.S., Professor of Physiology in the University of Glasgow, etc., and writer of the article on "Sleep" in the *Encyclopædia Britannica*, as saying that "a young growing lad should have ten hours of sleep, both summer and winter," and that he had known men who needed nine hours' sleep if they were to do effective work. Prof. C. S. Sherrington, chairman of the British Association on School Hygiene, says: "During sleep the chemical changes of the body are reduced in the case of CO_2 output to one fifth so that the organism during sleep may be said to have its fires banked instead of being run under forced draught. Sleep is not only a respite from chemical change, it is a mechanical rest as well. By insufficient rest the growth can be stunted and development retarded. That most of the boy's growth in stature is done in bed; that without plenty of sleep the activity of the waking day is like a house built on sand, in constant danger of breaking down and giving way."

Dr. Acland further says: "The number of hours in bed often does not represent the hours of sleep, especially in dormitories. We all must be acquainted with the fact that the quality of sleep is influenced by darkness, and to insure the most complete rest to the nervous system, it is necessary that sleep should not only be uninterrupted by noise, but also by the exclusion of sunlight from the room. In few schools would it appear that any attempt is made to encourage the habit of getting proper sleep, and the head masters should offer prizes to the best sleepers. That boys do want more sleep is clear from the fact that they often have to be roused out of a deep sleep in the morning and dress half asleep in silence and weariness instead of being filled with the confidence of spirit which is natural to the healthy boy."

On Nov. 19, 1905, Dr. Acland writes me: "The subject has been warmly taken up by the medical officers of the School Association which is a society which includes amongst its members the medical officers of a large number of schools in England. It was also taken up by the Congress of School Hygiene held in London in June, and the Parents' National Educational Union. All these bodies have sent official communications

on the subject to the head masters of all the principal schools in this country [Great Britain] and two of them have sent copies of my paper so that the authorities can hardly remain in ignorance of what our profession thinks about the matter in this country."

On Dec. 31, 1905, the London *Times* in a long editorial gives an interesting account of what is being done in Great Britain, and publishes communications from a large number of medical authorities concerning the inadequacy of the time allotted to sleep by many schools for boys, and in this editorial the *Times* quotes Dr. Acland largely.

Frederick Peterson, M.D., President of State Commission in Lunacy, New York, and who has a clinic of nervous and mental diseases in the Columbia University says, "When auto-intoxication is suspected as a causative factor in any nervous disorder, it is essential to regulate the diet which should consist mainly of milk. There are at our disposal a number of antiseptics, which though not always efficient are yet often of great benefit. I have found in my own practice that beta naphthol is one of the best intestinal antiseptics. I give it in capsules of 5 gr. each, two hours after eating, with water. In several cases of epilepsy and melancholia, it has acted extremely well. In many cases of epilepsy salicylate of soda has proved itself of great value, and salol, too, as an intestinal antiseptic. Sometimes I have made excellent use of peppermint for the same purpose. I think the abundant use of water a necessary adjunct to the treatment. I usually advise the drinking of hot water several times daily on an empty stomach; sometimes adding thereto frequent flushing of the large intestines with warm water."

Dr. Charles E. Quimby, of New York (the first to bring to my attention the Quimby syringe, so-called, and which I use for colonic flushing in most of my cases), in a paper read in Buffalo, May 31, 1901, on "The Relation of Intestinal Toxemia to Arterio-renal Disease," gives a history of several interesting cases. One, a man of forty-three, a contractor, complains of nervousness which prevents application increased by attempts to apply himself, insomnia and anxiety and undefined discomfort. Tongue coated. Pulse, full and hard. Urine shows excess of urates, etc. Diagnosis: Intestinal toxemia. Treatment, lavage of the colon every day until free, then twice a week. Laxative t.i.d. Vegetarian diet. Relieved within a week. Cessation of all symptoms within a month.

Dr. Allan McLean Hamilton, of New York, in a paper on "The Connection of Auto-Toxins with Certain Forms of Insanity," read before the Medical Society of London, some time ago, sums up his treatment as follows:

"The most successful treatment consists of lavage, intestinal antiseptics by means of hydrochloric acid, borax, salicylate of soda, charcoal, guaiacol, or naphtholine in small repeated doses, and the administration of the combination of

the red marrow from the small bones, blood and glycerin."

In another paper written by him and printed in the *Medical Record* later, on "Insanity in Connection with Diseases of the Ductless Glands," he refers to the enlargement of the thyroid as an immediate pathological condition in melancholic patients and strongly advises the administration of the organic extracts in this condition. In insanity coming from disturbance of the other glands he gives thyroid or powdered pituitary gland. In hysterical mania he says he has used the splenic glyceride in divided doses of from 5 to 20 gr. which promptly reduced excitement and produced sleep.

Dr. Maurice S. Guth, superintendent of the State Hospital at Warren, Pa., writes me as follows: "Our treatment of cases of insanity due to auto-intoxication consists of stimulants, nourishment and hypnotics, milk, whiskey, amylene hydrate, prolonged hot baths and careful nursing."

Auto-intoxication is only mentioned as the cause of death in two state reports of the insane in 1902. Louisiana gives one death and Alabama four deaths from auto-intoxication.

Dr. Marcello Hutchinson, superintendent of the Vermont State Hospital at Waterbury, Vt., says that in the care of such cases of mental disturbance as are manifestly due to the action primarily and secondarily of bacterial toxins, the treatment, aside from the routine hospital confinement, has been symptomatic, but not particularly antiseptic in character.

Dr. J. W. Gray, Jr., in an article on "Auto-Intoxication," in the *Journal of the Mississippi State Medical Association* for September, 1905, says that "auto-intoxication as defined by most authors is a condition of self-poisoning produced by the absorption of ptomaines or the products of fermentation and decomposition in the stomach or intestines, or both; but I think the term should have a much wider significance and should embrace the defective elimination of all end products of metabolism." For treatment, he gives calomel in small doses every three hours with some saline in hot solution and strychnine hypodermically. Hot salt solution by hypodermoclysis and irrigation of the bowels with hot salt solution through the return flow rectal tube.

Dr. J. T. Mitchell, superintendent of the State Hospital at Jackson, Miss., in an article read in Montreal, June, 1902, on "Instinct an Important Factor in the Diagnosis and Treatment of Diseases," in speaking of purgation says, "One of its good properties is to evacuate the ptomaines and impure secretions remaining in the bowels; even in dysentery, it is the instinct of the patient and thus gives a valuable hint to the physician to save him from an auto-toxic death."

D. L. Field, M.D., of Jeffersonville, Ind., in an article on auto-intoxication, says: "Among the poisons which rank first are the toxic substances resulting from intestinal putrefaction.

It is strange to find so many poisons in the intestinal canal, and yet so few toxic accidents; and we must never neglect, in auto-intoxication, to keep up the strength of the patient so that he may have time to eliminate the poison. If we keep him alive, we may save him. The therapeutic treatment is effected to a certain extent by nature. Poisoning from substances in the alimentary organs may be diminished. Patients must not take broths that contain the mineral elements of meat, and diet should be restricted." Hydrotherapy, cathartics, enemata of turpentine and the yolk of egg in warm water, are some of the things he recommends.

Dr. H. E. Allison, superintendent of the Mattewan State Hospital, Fishkill Landing, N. Y., writes me: "We have no doubt that there are many cases of mental disease caused by derangement of the metabolism. Many manifestations of mental disease depend upon auto-infection not only from the intestinal tract, but upon disorders of other excretory channels. Derangements of the digestive organs and consequent evils are, in our opinion, responsible for many conditions of ill health and for various forms of insanity. Personally we have felt that it is responsible for many maniacal outbreaks, for many states of mental depression, and have always directed our attention in a therapeutic way to such conditions, often with satisfactory results."

Dr. Moses J. White, superintendent of the Milwaukee Hospital for the Insane, writes: "We do not ignore the element of auto-intoxication. In almost every case on the assumption that that element is present in a greater or less degree we have had very gratifying results by the pursuit of this theory, and treatment adapted thereto. The measures chiefly used to relieve this condition consist in increasing the action of the skin and bowels by turkish baths, massage and the administration of saline cathartics, and the employment of high enemata, and we find that these methods prove to be very efficacious."

Drs. Brackett, Stone and Low, writing in the BOSTON MEDICAL AND SURGICAL JOURNAL, July, 1904, give for the treatment of acid intoxication the administration of sodium bicarbonate by mouth or in enemata and infusion of large amounts of saline solution.

The cause of acid intoxication they state is some derangement of the metabolism.

Dr. F. Ferschheimer, of Cincinnati, Ohio, writes as follows: "In regard to your own subject, the relation of auto-intoxication to psychoses, I am sure that it exists. We all recognize the psychoses of Graves' Disease, for instance, and in a number of cases I am able to give complete relief by the administration internally of large doses of quinine. Again, the psychoses characterized by depression have been absolutely relieved in a large number of cases by the treatment of intestinal auto-intoxication. Another class that I might mention that have been relieved on the principle of auto-intoxication are some of the menopause psychoses."

Dr. E. C. Dent, superintendent of the Manhattan State Hospital, Ward's Island, writes me as follows: "There is no question in my mind that a number of our psychoses have as their basis an auto-intoxication. It is quite probable that in course of time dementia paralytica, dementia precox and the insanities occurring in epilepsy will be traced to auto-intoxication. We have for some time been making careful studies in this direction, but as yet feel the results we have obtained have not been sufficiently established to justify me in bringing the matter before the profession. It is conceded that the most prominent physical disturbance we find in insanity is that of disturbance of nutrition due to the derangement of the gastrointestinal tract. Our principal aim is to restore as quickly as possible the normal functions of the body, and our treatment can be summed up in two words, *eliminate* and *supportive*. I feel that this is an important field that has not been given the consideration it should."

In November, 1905, I visited the Manhattan State Hospital and spent some time with Dr. Adolph Meyer. He said to me, "Why should we use the term 'auto-intoxication'? Why not say 'habit-disturbance' and correct the habits of the glands, secretions and organs, and life of the patient—the same as our mothers would have done if we had contracted bad habits?" The result of his analysis of urine shows him that indican varies in normal individuals, so he thinks it is not to be depended upon. For melancholies and excited patients, especially, he gives calomel, prolonged baths of from twenty-four hours to a week, sometimes, at temperature from normal to 105°. No restraint is used; if one nurse is not sufficient then two are assigned. Then the hot or cold pack. Two pictures are taken of each patient on entering.

(To be continued.)

Reports of Societies.

WESTERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

PROCEEDINGS OF THE FIFTIETH ANNUAL MEETING, HELD IN KANSAS CITY, MO., DEC. 28 AND 29, 1905.

TODD PROSSER, DR. H. D. NILES, SALT LAKE CITY, LEAD, to the chair.

THE customary Address of Welcome and Response to the same were omitted, and after a brief speech by the Chairman of the Committee of Arrangements, the reading of reports was begun.

THE TRANSVAGINAL OPERATION FOR THE TUBES IN UTERINE AND ADnexAL DISEASE.

DR. CHARLES A. BOWERS, Wichita, Kan., read three more conservative and rational operations on these patients would yield better results and lower the mortality per cent. An exact diagnosis of many cases can only be made upon suprapubic exposure of the vesical outlet. The suprapubic operation can be done

with greater exactness and will yield better results than the infrapubic in morbid conditions in the male, as has been the case in the female pelvis. The suprapubic route is as rationally indicated for the relief of prostatic obstruction at the urinary outlet as it is in vesical calculus. The perineal operation offers only 30% of cures, with a mortality of 7%, and a 50% chance of having exchanged one urinary difficulty for another, and not infrequently a lesser for a greater one. The transvesical operation entirely relieves all who survive it of their urinary trouble, if it is due to obstruction in and about the vesical outlet, except when they are carcinomatous in character, without sequelae; and with the improved operative technique of to-day no greater mortality.

The controversy that is now going on relative to perineal and suprapubic prostatectomy is only a repetition of the one waged when lithotomy was undergoing its evolution. Who-to-day cuts for stone in the male bladder via the perineum? The most essential thing to-day is to bring home the facts to the profession in general. First, that prostatism is due to other causes than hypertrophy of the prostate gland. Second, that the transvesical operation for the relief of prostatism has attained a sufficient degree of perfection to be recommended to this class of pitiable sufferers, with the assurance of a cure if undertaken before the inflammatory process has reached the kidney and arrested its functional activity. Third, patients should not be submitted to catheterism in the future as they have been in the past until it is hopeless to interfere surgically.

DISCUSSION.

DR. HENRY T. BYFORD, Chicago, thinks hypertrophy of the prostate is due to some irritation; that it cannot come entirely from age alone, or from the sclerotic changes which occur with age. In some cases of enlarged prostate he thinks there is a gouty diathesis, and that perhaps the treatment recommended by Fletcher of reducing the calories from 3,000 to 1,500, and dieting the patient a little, might obviate the necessity of suprapubic cystotomy in some cases.

DR. JAMES E. MOORE, Minneapolis, Minn., did his first prostatectomy suprapubically twenty years ago, and as it was done at that time it was a bloody, blind and unsatisfactory operation. When perineal prostatectomy was suggested and practised so successfully a few years ago, he took it up and has been advocating it ever since. He maintains that there are certain cases that can be operated better by the suprapubic route as it is done at the present time. However, in his judgment, a surgeon is not broad-gauged, he does not do the best work he can do until he performs both operations. He believes the perineal route is the choice in the vast majority of cases.

DR. J. W. GRANT, Denver, Col., maintains that in the average case the perineal operation is the more desirable one. In cases in which there is pus, hyaline and granular casts, the perineal route is indicated. The dirty cases can be better and more safely operated through the perineum; the clean cases by suprapubic cystotomy by modern methods.

DR. J. W. ANDREWS, of Mankato, Minn., believes there are selected cases which should be operated by the transvesical route, but in the majority of instances he thinks the perineal route is the better. He has operated eleven times, with one death. One of the operations was done suprapubically. He found it difficult, unclean, and was unable to get good drainage. Lack of drainage is one objection to the suprapubic route, as it is not and could not be as good as it is through the perineum.

DR. M. L. HARRIS, Chicago, says that when one attempts to generalize from a few cases in surgery, the generalizations are always wrong. The essayist, he said, had generalized from 12 cases that the suprapubic route is the only one to adopt; consequently, he thinks he is wrong. There are many cases in which a good and thorough operation cannot be done suprapubically. There are also many cases in which the best operation can only be done suprapubically; consequently, the surgeon must select the best operation for the particular case.

Every case of prostatism should be diagnosed accurately before an attempt is made to select the method of operation, and the surgeon can only make such a diagnosis when he employs all the means at his command, and one of these is a thorough cystoscopic examination.

SOME OBSERVATIONS ON RENAL SURGERY.

DR. D. W. BASHAM, of Wichita, Kan., deals with certain questions with reference to nephropoies and suppurative diseases of the kidney. He points out the reasons why nephrorrhaphy sometimes fails to relieve the symptoms. He discusses the desiderata necessary to make the operation a curative one. He criticises the methods in vogue, and refers to the modifications necessary to make the operation curative by fixing the kidney in a natural position, and of obliterating the enormous pouch resulting from the mobility of the kidney.

He refers to the methods of Jacobson and Edebohl and says that they give permanent results, so far as anchoring the kidney is concerned, but he thinks the kidney is fixed too low in the loin, too far from the center of the vertebral column, and too near the anterior wall of the abdomen. There are many operations which anchor the kidney permanently, but which are open to objection from the standpoint that the organ is not held in the natural position. Surgeons do too many nephropexies without making a thorough and painstaking effort to ascertain the conditions of the kidney, its pelvis and the upper part of the ureter.

DISCUSSION.

DR. WILLIAM JEPSON, Sioux City, Ia., believes there exists a range of mobility of nearly an inch to every kidney that is normally placed. Each case of movable kidney has to be considered by itself. A certain number of them have to be fixed. He is not a firm believer in decapsulation of the kidney, for the reason that it has been demonstrated experimentally that if a kidney is decapsulated, in the course of three or four months a new capsule is formed, and the amount of blood supply the kidney receives from the new source during the time it exists is not sufficient, probably, to maintain vitality.

DR. A. W. ABBOTT, Minneapolis, Minn., says that in a series of over two thousand examinations, only a very small number of kidneys were felt beyond the limits described in text-books, but this is not in accord with clinical experience. There are very few of these patients who present any symptoms referable to the position of their kidneys, largely due to the fact, he believes, that the upper part of the ureter falls with the falling of the kidney.

DR. C. W. OVIATT, Oshkosh, Wis., said occasionally it is necessary to operate on cases of movable kidney. If an operation is undertaken, surgeons should profit by the teaching of Harris, which was promulgated several years ago, of obliterating the space beneath the kidney rather than trying to suspend the organ alone either by the fibrous or fatty capsule. If one simply suspends it, undoubtedly there will be a re-

currence of the displacement. The space beneath the organ should be obliterated by the Harris method, making a new pocket of peritoneum, using a purse-string, as Harris did.

DR. A. E. BENJAMIN, Minneapolis, Minn., lays down three or four rules for fixing the kidney. One is when it shows evidence of hydronephrosis due to a faulty position of the kidney, or to a faulty position of kinking of the ureter, not allowing free drainage. Another is where there is enlarged kidney, congested or dilated, and where it is tender. On examining such patients, one can elicit pain by palpating the kidney. Another condition is where the kidney seems to produce obstruction of the alimentary canal, either of the colon or duodenum, and accessory organs, such as the gall-bladder apparatus, the common bile duct, etc. In such cases the kidney is prolapsed, adherent down in the pelvis, and the patients are troubled with obstipation, and by putting the kidney in position and relieving the adhesions the symptoms will partially or entirely disappear. Patients with a dilated condition of the stomach and a diseased condition of the gall-bladder, when apparently due to loose kidney, are sometimes benefited if their cases are taken early.

CARCINOMA OF THE DESCENDING COLON.

DR. W. W. GRANT, Denver, Col., said that the rectum is the most frequent seat of intestinal cancer. The descending colon is next in order. Cancer of the stomach is more common than that of the intestines, and its progress is more rapid. Cancer of the colon is more common in men; it is not common under thirty years of age. It is primary and circumscribed. Metastasis and constriction are late occurrences. Chronic indigestion, both occasional diarrhea and mucous discharges, are suspicious symptoms. Ulceration is a late occurrence. Floating kidney and membranous colitis may exist a long time without producing marked symptoms or seriously disturbing the health. It is less malignant than the same disease of the stomach or rectum. It is not painful until late. Stenosis is not attended with striking symptoms until obstruction is complete. Mild malignancy and late infection demand radical operation. More care is necessary in examination at an early period, in order to detect disease. He reported a case of long duration. Typhlotomy was followed by radical operation later. He considered the methods of procedure, intestinal anastomosis and results.

DISCUSSION.

DR. I. R. PERKINS, Denver, Col., narrated the case of a woman, sixty-two years of age, whom he saw three weeks ago, in whom there was a tumor in the groin in the region of the cecum. It was supposed by the physician who had charge of the case to be an appendiceal abscess. It was very hard. There was vomiting of fecal matter, and had been for twenty-four hours. He made a long incision in the right rectus and on examination found a hard tumor, but no pus. The appendix was caught in the mass, also the ileocecal valve and a portion of the cecum. He resected the intestine and closed the end of the colon by the use of the Connell suture, then implanted the ileum into the upper portion of the wound. The patient did well except there was a slight leakage at the outer and upper portion of the anastomosis, and a great deal of very small fecal fistula which he thinks will soon close. Another time he believes, he would close the ends of both guts and make a lateral anastomosis.

DR. A. W. ANTONI, Minneapolis, calls attention to one feature connected with cancer. It has been his fortune to see two cases of intussusception in his own practice, and one in the practice of the late Dr. Dugan.

He thinks intussusception occurs in cancer of the large intestine oftener than in the small. He has never seen a case in the small intestine, but has no doubt it may occur. He thinks it is wrong to make an immediate anastomosis in these cases, because they are the ones in which a colostomy should first be made, because the condition about the cancerous area is so extreme that the parts will not unite if one attempts to sew them.

DR. J. L. STUMMES, Omaha, in referring to the location of carcinoma, said that he had found it everywhere in the large intestine, except at the hepatic flexure. In dealing with carcinoma of the transverse colon it is necessary to manipulate the gastrocolic omentum, and unless this is done with the greatest gentleness, one is apt to have a complication following the operation which may be serious, namely, hemorrhage into the stomach. A week ago he removed the transverse colon, for carcinoma, and as a result of manipulation there was a serious hemorrhage for days from the stomach. The speaker's attention was first directed to this complication some years ago following an operation for incarcerated umbilical hernia, in which it was necessary to remove considerable portions of the omentum, and the manipulations were rather rough. The operation was proceeded with without any special difficulty, but it was followed in two hours by profuse hemorrhage from the stomach, from which the patient died.

DR. GRANT, in closing, said he wanted to urge one point, namely, the symptoms of this disease are not pronounced at an early period; but when there are suspicious indications it is very important to use more care in examining these patients than the surgeon is accustomed to do. Under favorable conditions, when the bowels are thoroughly evacuated, the surgeon may discover the presence of a growth in the colon, and this is the time when operation brings about such satisfactory results, and also it is the period when operation can be done at one sitting.

THE CHOICE OF LIGATURE AND SUTURE MATERIAL IN THE SURGERY OF THE PERITONEUM.

DR. H. G. WEATHERS, Denver, Col., said that he no longer uses non-absorbable ligature or suture material for purely serous surfaces. The absolute sterilization of catgut is no longer difficult, and it is now realized that so-called catgut infections usually have their origin in a contamination of the gut through handling or in allowing it to come in contact with unclean surfaces or substances in or about the wound. The chromizing process prolongs the life of even the smaller strands to any desired time, providing the mucous surfaces or serotons are not in contact with it. These features make of catgut an ideal suture and ligature material for intraperitoneal use, and all that becomes necessary is the exercise of due care and skill in the selection of the catgut and the application of sutures and ligatures, and the making of knots. So far, he has had the good fortune never to have had a secondary hemorrhage or other accident from the use of catgut, either in the way of a slipping knot or a too rapid absorption, and he believes this immunity from accident to have been due to the exercise of extreme care in its application.

For about three years he has had great satisfaction in using the Dukes electrolytic catgut suture, a suture in selected cases, then doing away with all catgut and suture material, and using pedicles. For a year he has been using a catgut suture in cancer of the stomach, and finds it ideal. It is easily rapidly and effectively absorbed, and gives the greater security and safety in the management of recurrent early cases. Therefore, he is convinced, one and payment to double that patient operated

upon with the Downes clamp by either the vaginal or abdominal route have smoother and more rapid recoveries, and above all a very noticeable freedom from the intense pain and backache so common after all pelvic operations when the terminal nerves of this region are tied for days or weeks in the bight of a securely lifted ligature or closely applied suture.

He has had one or two experiences with the Downes clamp, however, which lead him to believe that there is increased danger from thrombosis and embolism after its use, occurring occasionally several weeks after operation, and until this doubt is settled he would exercise great care in the selection of the cases upon which it is to be used.

A NEW TECHNIQUE FOR BREAST AMPUTATION.

DR. JABEZ N. JACKSON, Kansas City, Mo., described a new technique for use in radical operation for carcinoma of the breast. The method of operation was devised by him about eight months ago, and has once been used exclusively by him in all cases of the character with which he has had to deal. His experience is limited to 8 cases. He believes that the method has certain elements of advantage, as well as originality, which justify him in presenting it for a wider field of service.

After describing the technique at considerable length, he emphasizes the following advantages: (1) The flap forms a covering for the chest defect, as a rule, without any tension, and thus almost entirely obviates the necessity of grafting, which is so frequent in other methods. He has not found any case operated on by his method that requires grafting. This is not intended to cover cases where there has been extensive previous ulceration, or where one cannot get healthy tissue for a flap of any character. (2) The drawing of the skin up to the arm does away with the fossa axillaris, and thus with the large space which nature would have to obliterate by the formation of scar tissue, with the resultant pressure upon the axillary vessels and nerves. (3) The ligation of all vessels at their nearest point of origin does away with the use of a large number of hemostatic forceps, which cause loss of time, to say nothing of the inconvenience of having a large number of instruments in one's way. He has in no instance used more than one dozen forceps in this operation, and says he can usually do the work with about six. The operation is thus shortened, so that, as a rule, he finds that to complete it requires from forty minutes to one hour or thereabouts. In fact, personally he has never run beyond an hour, even doing the operation slowly, as he has in most cases, for the purpose of demonstrating this new technique, and he has done the operation in a period of time as short as forty minutes. (4) The most noticeable feature to the onlooker, when the operation is done, is the marked absence of hemorrhage, so that it can almost be called a bloodless operation. (5) The entire technical portion of the operation is completed before the chest is exposed by the removal of the breast; therefore, long exposure of an enormous area of raw chest surface, with the attendant shock, is done away with. As soon as the breast is removed, the surgeon is ready to close the wound.

DISCUSSION.

DR. CHARLES A. POWERS, Denver, Col., said the key to the operation described by the essayist lies in the flap which covers the large skin defect. This feature appealed to him. He asked Dr. Jackson whether in any of the cases there has been any sloughing at the corners of the quadrilateral flap. Personally he has been very much pleased with the procedure of Dr. J.

Collins Warren, of bringing up a flap from the arm. The technique of Dr. Jackson's operation is easier he thinks, and said he is going to employ it in the future.

DR. JACKSON, in rebuttal, said that in some instances there has been slight sloughing at the corners of the flap. In recent cases, by using a wide Halsted mattress suture for tension, union was secured without sloughing.

FRACTURES ABOUT THE ELBOW JOINT.

DR. W. D. HAINES, Cincinnati, Ohio, said that the open method of treatment is to be commended in all cases of extensive joint involvement. After freely exploring the joint cavity, freeing it from clot, removing detached spicula, and fixing the fractured fragments, a strip of fascial from the arm may be inserted between the joint surfaces after the method of Murphy in excision or the Mosetig bone filling may be used, with a view to preventing adhesions until sufficient repair has taken place to permit of passive motion. The operation is completed by suturing the capsule, fascia, nerves and skin with ample provision for drainage. The arm should be dressed in the fully extended position, placed on an incline, and a light weight applied. This position and dressing should be changed at the end of one week. After light massage the arm is redressed at a slight angle, and permitted to remain for four or five days, when it is changed to as nearly a right angle as possible without pain to the patient too severely. Subsequent treatment consists of massage and passive motion every third day for a period of three weeks. Local pain and tenderness are given precedence over crepitus by the author in diagnosis. The use of weights to overcome muscular rigidity permits of infiltration, diminished elasticity, interfering rather than assisting in the reduction of these fractures. The proper treatment of pain and swelling accompanying fracture is early reduction and the application of extension, ice, or other adjuvants being deemed advisable. Immediate amputation is reserved for those extensive crushing injuries, such as bumper wounds, in which the circulation and joint are so badly damaged as to be beyond all hope of repair. The author expressed the opinion that fractures about the elbow joint have been over-treated in the past.

TALIPES CALCANEUS.

DR. A. F. JONAS, Omaha, Neb., described a plastic operation for the permanent relief of *ciatricial talipes calcaneus*.

TUBERCULAR PERITONITIS.

DR. T. E. POTTER, St. Joseph, Mo., referred to the etiology of tubercular peritonitis, to the symptoms and diagnosis, giving the more modern views on the subject. An early diagnosis is highly recommended and the physician is urged to be on the alert when there are any symptoms pointing toward tubercular peritonitis. The success in treatment at any age is much greater when the disease is recognized before it has made too extensive progress. In the treatment, the writer gives preference to surgical methods, showing that at least 66½% or more recover in the hands of surgeons, while not more than 33½% recover after medical treatment, by the latest and most approved methods of hygiene and the administration of medicine.

A discussion of the theories as to the benefit of surgical interference was taken up in the paper.

THE TREATMENT OF VARICOSE VEINS.

DR. C. H. MAYO, Rochester, Minn., said that the various operations in use at the present time are necessary from the diverse conditions and symptoms mani-

fested by the disease. The condition is probably from a defect in the vein walls, valves, or enervation. The Trendelenburg operation is deservedly popular, especially for cases of vicious venous circle of the deep and superficial veins of the thigh. Enucleation of the veins in a subcutaneous manner through several short incisions is a satisfactory treatment for the majority of cases. The subcutaneous removal of the internal saphenous from above, at the side of and below the knee, by destroying the main superficial channel and deep communicating branches, is the best method, accomplishing in one operation all that can be obtained by either the Trendelenburg above or the Schede below. Goerlich's report shows 81% of operations as satisfactory, and 16% failures. From experience in 184 cases this seemed a fair statement of the late results from the various methods employed at present, except in the percentage of failures. Dr. Mayo thinks 16% is too high, as many of those not satisfactory are much improved over their former condition.

UNDESCENDED TESTICLE.

DR. A. E. BENJAMIN, Minneapolis, Minn., said that the causes of undescended testicle may be due to improper development of the organ, to a rudimentary vaginal process, to peritoneal adhesions between the testicle and bladder or intestine, and to obstruction of the canal. The testicle may be found anywhere along its course of descent to a point just outside the external ring. Hernia is a common complication of this condition. The organ will not develop as well when located at any point above the scrotum. The possible sterility of the cryptorchid, and the frequency of malignant, tubercular and traumatic disturbances, complicating this condition, all argue for an early operation to place the gland in its proper location. The operation for undescended testicle has been perfected in the last few years. It has been demonstrated that by careful dissection and an occasional sacrifice of the spermatic vessels, the organ will remain in the scrotum.

THE FREE INTERVAL IN MENINGEAL HEMORRHAGE.

DR. F. GREGORY CONNELL, Sahda, Col., reported two cases, one of which he said was quite usual, with an interval of two hours, in which recovery followed operation. The other was one in which the patient retired for the night, five hours after a slight trauma, and was found dead in the morning. Autopsy revealed a fracture, with a large extradural clot from the lateral sinus. This second case was not very rare; but in 80 cases collected by the writer only 2 similar instances were encountered.

The free interval is defined as a practically symptomless period of consciousness, which follows a primary, transitory unconsciousness, and precedes a secondary, increasing and permanent loss of consciousness. This condition is usually found in association with a head injury. The cause of the bleeding is usually traumatism, with or without fracture. Various causes of the free interval are considered, with preference given to Kocher's explanation. The length of the free interval is studied, in an analysis of the 80 cases, the average length being thirty-five hours. The difference between extra and intra-dural hemorrhages is noted, and the long free interval in this series of cases is found to accompany the intradural hemorrhage. But it is stated that much stress cannot be placed upon the length of the interval as a guide to the location of the hemorrhage.

The typical train of events in a meningeal hemorrhage is: (1) trauma; (2) concussion, unconsciousness; (3)

consciousness, free interval; (4) compression, unconsciousness; but this may be variously modified.

In the diagnosis the focal signs are of more value than evidence of injury.

The occurrence of collateral hemiplegia must be remembered. Fractures of limbs, previous paralysis, or congenital attachment of the iris has caused confusion in diagnosis. Contusion, or laceration of the brain, abscess, fat embolism, and other conditions may closely resemble meningeal hemorrhage.

In the 80 cases collected, 52 were operated upon, and 28 were not. After operation there were 39 recoveries, and 13 deaths. Without operative interference, 4 recovered and 24 died.

THE EFFECTS OF OSMIC ACID INJECTIONS.

DR. JOSEPH RILEY EASTMAN, Indianapolis, Ind., said the injection of ten drops of osmic acid in a two per cent. solution into sensory nerve trunks is safe. The likelihood of irritation of the kidney, however, should not be forgotten in cases exhibiting kidney lesions.

Injections into the inferior dental or other nerves should not be made through the mouth since infection of the wound and necrosis may result, with consequent failure in the action of the acid. Immediate relief should not always be expected, notwithstanding the cases of Bennett and Murphy were all immediately relieved. No one of the writer's cases, even those in which the acid was accurately injected into the nerve trunks and into the perineural fat, was promptly relieved, relief coming in from one to two weeks. The observations of Wright on this point, who has had a large experience with osmic acid injections, correspond to those of the writer.

There is very little doubt but that the stretching of the nerve trunk necessarily incident to the injection is productive of good, supplementing, as it does, the action of the acid. There is no good reason why the stretching should intentionally be avoided, except perhaps for experimentation. In the case of small nerves, it will be found exceedingly difficult to inject directly into the nerve trunk, that is, the needle eye will pass to the distal side of the thread-like nerve, or perhaps not enter the nerve substance at all, or, notwithstanding the utmost care be used, the fibers may be so teased apart by the needle point that the fluid will simply be spilt about the nerve. In such a case, in order to bring the acid in contact with all of the fibers, it is wise to clip the nerve so that the end may be bathed in the fluids. The effect of manipulation of the nerve, as by stretching, has not as yet been eliminated as a possible aid to the chemical action of osmic acid; therefore, a general anesthetic should be administered so that neurotomy or section of the nerve may be practised, if desired.

The writer's experiments have shown no other changes in the nerve tissues as the result of injections of osmic acid than the disintegration of fat and oil globules in the perineural space and in the white matter of Schwann, such white matter of Schwann being simply fatty matter in a fluid state, insulating and protecting the essential part of the nerve. The degenerations appearing in the nerve itself are only such as may be attributed to nutritional changes and exposure to the indirect result of the selective action of osmic acid of destroying fat. There is no reason why the fat should not be restored, and the nerve again be once capable of transmitting sensation, that is, the neuritis and the neuralgia may return after injection of osmic acid. Osmic acid injections are uncertain in effect as to the cure or relief of neuralgia. A large percentage of cases of neuralgia may be relieved for months by osmic acid injections. The injection of osmic acid for the relief

of the douloureux is quite justifiable, even if it should become necessary to repeat the injections at intervals of a few months, particularly in view of the unfavorable results of the so-called radical operation. The local irritation produced by the acid and the remote toxic and irritant effects are not serious in their consequences and have no meaning as to the effect of the osmic acid in relieving neuralgia. The solution of osmic acid should be made fresh for each operation, as deterioration is rapid.

(To be continued.)

Recent Literature.

A Manual of Bacteriology. By HUBERT J. WILLIAMS, M.D., Professor of Pathology and Bacteriology, Medical Department, University of Buffalo. Revised by B. MEADE BOLTON, M.D., Expert, Bureau of Animal Industry, Washington, D. C. With 108 illustrations. Fourth edition, revised and enlarged. Philadelphia: P. Blakiston's Son & Co., 1012 Walnut Street. 1905.

That a new edition of Williams's well-known textbook was demanded only two years after the appearance of the third edition clearly indicates the favor the book has found. It is well adapted to the needs of the medical student. The section on immunity has been amplified, and records the recent advances made in this subject. There is a good presentation of the theories of Bordet and Arrhenius as well as the better known side-chain theory of Ehrlich. The original photomicrographs of bacteria are excellent. The book contains much information not found in larger and more pretentious works. It is to be hoped that in the next revision *Micrococcus catarrhalis* will be noted and the paratyphoid bacilli more adequately described.

Operative Surgery for Students and Practitioners.

By JOHN J. McGRATH, M.D., Professor of Anatomy and Operative Surgery at the New York Post-Graduate Medical School; Surgeon to the Harlem Hospital, etc. Second edition, thoroughly revised. Illustrated. F. A. Davis Co., publishers. Philadelphia. 1906.

The author claims that this edition was published after a thorough and careful revision. He believes that the new features introduced will greatly enhance the value and usefulness of the work which is intended to combine in a practical manner surgical anatomy and operative surgery, "a knowledge of one being essential for the intelligent study of the other." At the same time he has tried to avoid the introduction of anatomical data which would have no practical surgical value from an operative standpoint.

The book is a royal octavo volume of 628 pages, supplemented by 265 illustrations, many in color and half-tone. The classification of operations is that of the regional anatomist. After a short introductory chapter in which anesthesia, the technic of incisions and sutures and control of hemorrhage are quite concisely discussed, the descriptions of special operations are grouped

under the regions of head, face, neck, tongue, thorax, abdomen and back, rectum, hernia, spermatic cord, testis, etc., urinary system, upper extremity and lower extremity. Under this arrangement operations on blood vessels, nerves, and such widely distributed organs are described when the region in which each specific structure is located is under consideration.

The operative list is a full one and includes many so-called atypical procedures in addition to the operations usually found in the customary school courses in operative surgery. In the section on the abdomen, gastro-enterostomy, the operative technic required by pathological changes in the stomach and intestine, as well as the pancreas and spleen, is described in some detail. Diagrammatic drawings are used for purposes of illustration. Much new and interesting material has been added to the subject matter of this edition. The illustrations assist in a clear understanding of the meaning of the text. Some are excellent and very accurately depict operative detail. By the aid of the appended index and by a system of paragraphing of the text, any particular operation can readily be found. In some operations the final details of operative technic are omitted, as, for example, intravenous infusion, but, as a whole, the book is an excellent one and well worth inspection. To the operative surgeon it is an excellent review of the subject.

The Practice of Medicine. A Textbook for Practitioners and Students with Special Reference to Diagnosis and Treatment. By JAMES TYSON, M.D., Professor of Medicine in the University of Pennsylvania and Physician to the Hospital of the University; Physician to the Pennsylvania Hospital; Fellow of the College of Physicians of Philadelphia; Member of the Association of American Physicians. Fourth edition, revised and enlarged. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1906.

This excellent textbook on the Practice of Medicine has reached its fourth edition. In preparing this edition for the press Dr. Tyson has made those alterations in the text which the progress of knowledge demands. The most significant change is a revision of the section on animal parasites by Dr. Allen J. Smith. The illustrations have been improved and amplified, and various minor changes have also been made. The book in general maintains the standard of excellence with which we have become familiar, and will continue to hold its place as one of the recognized best textbooks on general medicine. The section on diseases of the nervous system has been edited by Dr. W. G. Spiller, which is a guaranty of the correctness of its statements. It is, however, becoming increasingly unsatisfactory to include in the limited space permitted so large a subject as the disorders of the nervous system. The typography of the volume is admirable, and the illustrations, although not so numerous as in certain allied books, are adequate and extremely well executed.

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THE DEATH OF PROFESSOR PIERRE
CURIE.

IN view of the recent events which have been happening in the natural world, there is danger that the full significance of the death of Professor Curie to the world of science may be overlooked. His death occurred last week under perfectly avoidable circumstances. Deeply preoccupied, as was his usual habit, he was thrown down and killed by a passing vehicle on a Paris street, which, had he been on his guard, might easily have been escaped. Professor Curie's laboratory assistant on learning the news is said to have remarked, "I knew my dear master would be killed some day. He was very imprudent, and was constantly dreaming when walking the streets."

It is quite impossible to speculate intelligently as to what this extraordinary man would have accomplished had he lived, but in view of what he and his talented wife had already done, it is not hazardous to say that much in the way of scientific discovery was still in store for him. The very great prominence which his researches on radium have given him, within the last few years had not in the least detracted from his scientific ardor nor from the complete simplicity of his life. His career up to his untimely death had been so remarkable and so measureless, unexpected, that much future discovery might well have been predicted.

As a boy he had the reputation of being a prodigy and for this reason was early placed under the care of a private tutor. The preparatory studies leading up to the degree in arts were wholly congenial, and he gave no promise until his mind

was allowed to enter upon the subject of abstract science. His devotion to the scientific exploitation of radium has made one of the most romantic chapters in the history of modern science. To it he has given all his time and energy, and has not been tempted or distracted by the offers which have been made him to better his social or financial position. For example, he declined the decoration of the Legion of Honor and rejected an offer of five hundred thousand francs for a small quantity of radium which he had laboriously gathered together. The Nobel prize he accepted merely that the money it brought might be devoted to further research. He finally, in 1905, accepted a chair at the Sorbonne, but only on condition that a laboratory should be there furnished where he, together with his wife, might continue their investigation. The documents relative to this laboratory were issued on the very day upon which he was killed.

In Professor Curie's death the world loses a man whose achievements already had placed him in the forefront of the discoverers in science, and also one who will stand as the best type of a disinterested man of science. It is to be expected that Madame Curie is conversant with the work in which he was engaged at the time of his death and that she will not only carry this to a conclusion, but also inaugurate further researches in the line in which both were masters.

THE DANGER OF EPIDEMIC DISEASE IN SAN
FRANCISCO.

NOW that the first shock attending the disaster at San Francisco has passed, many interesting and important problems will present themselves regarding the immediate future. That the city will be rebuilt there seems to be no question, but the situation presenting itself before active operations in this direction can be begun will no doubt prove even more difficult of solution than actual reconstruction. The practical destruction of the entire San Francisco waterfront, apart from the larger section to be repaired and exposed, is a serious and unique emergency. It means the possibility of epidemic disease and, therefore, the most urgent measures to prevent the outbreak of such a disease among the people from the great concentration of bodies of the thousands of the homeless and the great numbers of the homeless who are now crowded into the few remaining habitable structures. The health authorities have been very busy in the past few days in the preparation of plans for the disposal of the bodies of the victims of the disaster. These measures are being carried out with the utmost efficiency and the health authorities are doing all that is possible to prevent the outbreak of epidemic disease. The health authorities are also doing all that is possible to prevent the outbreak of epidemic disease. The health authorities are also doing all that is possible to prevent the outbreak of epidemic disease.

averted, but only through the most vigilant care, and co-operation on the part of the people who remain in the city or its neighborhood during the coming months.

It has long been recognized that plague has had a definite, though often extremely insecure, foothold in the Chinese quarter of the city. Revelations regarding the extent and character of the dwellings of these people have come to light as a result of the fire and general destruction. No doubt, from a sanitary standpoint, the city ultimately will be greatly benefited by the annihilation of the Chinese quarter. The possibility also exists that the infection of plague, now generally recognized to be conveyed by rats, might, under favorable circumstances, be disseminated beyond the region in which it has hitherto found a foothold. Although we have not the slightest idea that this is a real menace, it is no doubt desirable to be forearmed against it, should it by chance occur. In general, the developments of the next few weeks will be regarded with interest by the medical profession at large, and particularly by those especially concerned with the large problems of sanitation and prophylactic medicine. The relative order which has already been developed out of chaos through the efforts of General Funston and his assistants is sufficient evidence that no stone will be left unturned to prevent the avoidable consequences of the far-reaching disaster.

HUNTING AS A MEDICAL SIDE ISSUE.

In view of the forthcoming meeting of the American Medical Association and the means under consideration for the entertainment of the members, it is interesting to call attention to plans being made for the meeting of the British Medical Association, which this year is to be held in Toronto, Canada, from August 21 to August 25.

The *British Medical Journal*, in its issue of April 14, publishes a communication from its special correspondent on "Sport in Canada," under the general heading of the "British Medical Association." The opening sentence of this readable article is somewhat characteristic of the British mind: "The following notes on shooting and fishing in Canada have been compiled for the information of those who have it in mind to end off the scientific work of the meeting at Toronto by a sporting holiday. The temptations to do so are very great for the facilities for shooting and fishing in Canada are unrivalled." Following this tempting introduction is a series of brief

statements regarding the possibilities of the various portions of Canada as regards game, both large and small. As stated in another place, "the shooting possibilities of Canada cover anything from a snipe to a wild turkey and from a hare to a moose or a bear."

The efforts which this city is making toward the entertainment of its guests in June, so far as we know, do not include the possibility of hunting or fishing, except, possibly, on an extremely small scale. We suspect, in fact, that such entertainment has rarely been offered before in connection with a medical meeting. It goes far toward showing how diversified a function one of these great medical gatherings has become. The scientific pabulum is still served, but its importance is certainly being encroached upon in divers ways. We are inclined to think that the attendance at the British Medical Association meeting will be increased by the possibilities which this correspondent suggests. We have also no doubt that the coming meeting of the American Medical Association in Boston will find its attendance swelled by the fact that other meat than pure science is to be offered for its entertainment.

MEDICAL NOTES.

PATHOLOGIST AT THE CRAIG COLONY FOR EPILEPTICS. — It is announced that Dr. J. F. Munson of the University of Michigan has received the appointment of resident pathologist at the Craig Colony for Epileptics at Sonoma, N. Y. This position was formerly held by Dr. Onuf, who did much to develop the pathological work in epilepsy.

ANNUAL REPORT OF THE OHIO HOSPITAL FOR EPILEPTICS. This report states that on Nov. 16, 1904, there were 982 inmates in the institution and that during the year recently ended this number had increased to 1,328 under care during some period of the year. It is expected that this number will be still further increased in the future and that the next two years will see a demand for accommodations for 1,400 patients. These statistics are further evidence of the widespread interest in the treatment of this disease at special hospitals.

YELLOW FEVER INVESTIGATION. — The report of Working Party No. 3, on attempts to grow the yellow fever parasite and the hereditary transmission of the yellow fever parasite in the mosquito, has been published. The work was done by Dr. M. J. Rosenau and Joseph Goldberger.

The attempt to grow the yellow fever parasite was not successful, nor were the authors able to confirm the results of Marchoux and Simond regarding the hereditary transmission of the virus of yellow fever in the *Stegomyia fasciata*, who claimed to have shown that the progeny of a mother directly infected by a case of yellow fever are themselves infected hereditarily.

EXPLOSION OF A RADIUM TUBE.—In the current number of the *Medical Record* Dr. Robert Abbe of New York gives an interesting experience regarding the explosion of a radium tube. Since December, 1905, he had had fifty milligrams of pure radium bromide in a small glass tube hermetically sealed. On March 20, on attempting to remove the tube from its receptacle, the glass was pressed in such a way that it exploded with a loud report and a large proportion of the radium fell to the floor. By means of Röntgen photography it was possible to localize the exact position of the radium on the carpet. A portion of the carpet was carefully beaten out and further photographic tests showed that all the radium had been recovered. Dr. Abbe will hereafter keep his specimen sealed in a tube into the end of which is fused a fine platinum wire to permit the discharge of the stored up positive electricity. The danger of explosion in the careless handling of radium tubes has before been observed. The extraordinary value of the element renders precautions of every sort desirable. It is, however, gratifying to know that should such an accident happen, the radium may again be recovered and is not likely to be widely disseminated on account of its high specific gravity.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON.—For the week ending at noon, April 25, 1906, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 36, scarlatina 50, typhoid fever 7, measles 120, tuberculosis 38, smallpox 0.

The death-rate of the reported deaths for the week ending April 25, 1906, was 20.42.

BOSTON MORTALITY STATISTICS.—The total number of deaths reported to the Board of Health for the week ending Saturday, April 21, 1906 was 246, against 214 the corresponding week of last year, showing an increase of 32 deaths and making the death-rate for the week 21.56. Of this number 120 were males and 126 were females; 239 were white and 7 colored; 156 were born in the United States, 86 in foreign countries and 1

unknown; 49 were of American parentage, 172 of foreign parentage and 25 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 33 cases and 2 deaths; scarlatina, 39 cases, 2 deaths; typhoid fever, 6 cases and 1 death; measles, 156 cases and 3 deaths; tuberculosis, 48 cases and 29 deaths; smallpox, no cases and no deaths. The deaths from pneumonia were 41, whooping cough 3, heart disease 17, bronchitis 5, and marasmus 7. There were 13 deaths from violent causes. The number of children who died under one year was 48; the number under five years, 70. The number of persons who died over sixty years of age was 52. The deaths in public institutions were 64.

There were 1 case and 2 deaths reported from cerebrospinal meningitis during the week.

A POSSIBLE DANGER TO THE BOSTON CITY HOSPITAL RELIEF STATION. There is under discussion the question of running the extension of the Washington Street Subway under part of the Boston City Hospital Relief Station in Haymarket Square. The present subway runs under a corner of this building and causes a very perceptible vibration.

PREVENTION OF CONSUMPTION IN NEW HAMPSHIRE. The current number of the *New Hampshire Sanitary Bulletin*, which is published quarterly by the State Board of Health, is devoted to a popular consideration of the prevalence, cause, restriction and prevention of consumption. The object of this type of publication is that through general distribution among the people of New Hampshire a knowledge of the measures necessary to the restriction and prevention of consumption may be widely disseminated. The publication should certainly accomplish this end through its general arrangement and the easily understandable character of its subject matter.

NEW YORK.

HOSPITAL CONFERENCE OF THE CITY OF NEW YORK. Representatives of thirty-eight hospitals, at a meeting held at the New York Academy of Medicine on April 18, adopted a permanent organization for what is to be known as the Hospital Conference of the City of New York. Its purpose is the promotion of economy and efficiency in hospital management by the comparison of methods and results, and to this end the various institutions were notified to send in to the secretary detailed statements of their work and ex-

penditures. All the principal private hospitals, with the exception of the Presbyterian, have already joined the Conference, and it is stated that the public hospitals of the city will shortly be invited to obtain representation in it. Any hospital with not less than thirty free beds is eligible to membership on payment of the annual dues, \$5.00, and this entitles it to two representatives in the Conference. The following officers were elected: President, Rev. George F. Clover, St. Luke's; vice-presidents, R. H. Townley, J. Hood Wright Hospital, and Mrs. A. M. Lawson, General Memorial; secretary, Dr. S. S. Goldwater, Mount Sinai; treasurer, Dr. A. H. Harrington, New York Eye and Ear Infirmary. There is also an executive committee composed of seven members.

FRESH AIR WORK.—A conference of fifty organizations interested in fresh-air work was held at the United Charities Building on April 18. Addresses were made by President Darlington of the Health Department, Dr. John J. Cronin, chief inspector of schools for the department, and others, and the following resolution was adopted:

"Resolved, That this Conference considers it desirable to establish a bureau of application, to be composed of representatives of fresh-air agencies and of public schools, and to establish and maintain a card catalogue to be open to the use of all those interested in fresh-air work; secondly, that the fresh-air agencies communicate with the public school principals in the months of May and June, to discover children truly deserving but otherwise not reached."

Another resolution was adopted calling on the mayor to give his sanction to the Saxe bill, now pending at Albany, under the provisions of which the city would be empowered to appropriate \$2,500,000 for the purchase and establishment of a seaside park and home for convalescents.

A HEAVY VERDICT FOR PERSONAL INJURIES.—Capt. Alexander De Noyelles, of Watervliet, N. Y., obtained a verdict in the United States Circuit Court at Syracuse, N. Y., on April 11, against the New York, New Haven & Hartford Railroad Company for \$20,000 damages on account of personal injuries resulting from the company's negligence. The action was brought in a Federal Court for the reason that the railway company is incorporated in another state. The case is of unusual interest for two reasons: First, because the verdict is believed to be the largest of the kind ever awarded in a Federal

Court in New York State; second, because of the differing views of contributory negligence held by the Federal and State courts. At the time of the accident by which he was injured Captain De Noyelles was in command of the steamship "Winnie" of the Williams Line. He had just discharged a cargo of lumber on the New Haven docks on the Bronx side of the Harlem River, and was easting off a hawser preparatory to leaving when a tugboat belonging to the railroad company rammed a boat lying outside the "Winnie." By the shock he was thrown between his vessel and the dock and crushed, sustaining injuries which resulted in his total and permanent disability. The defendant road contended that the striking of the outside boat was not the proximate cause of the accident, and that the plaintiff was guilty of contributory negligence. On this point the difference between the Federal and State laws was brought out. It was shown that in the State courts, in a negligence action, the plaintiff must show that he is free from contributory negligence in order to recover damages, while in the Federal courts the defendant, in order to prevent recovery, must prove that the plaintiff is guilty of negligence.

Miscellaneous.

THE INTERNATIONAL CONGRESS AT LISBON.

The program of the entertainments held in connection with the International Congress of Medicine at Lisbon was as follows: On April 19 the inaugural meeting took place at 2 P.M. in the rooms of the Geographical Society, and in the evening the president of the Congress held a reception at the School of Medicine. On April 20 a garden party was given by Sir Francis L. Cook, Visconde de Monserrate. On April 21 the king entertained the principal delegates of the various governments at dinner. On April 22 there was bullock racing at Villa Franca, the journey there and back being made by water. On April 23 there was a *soirée* held by the Geographical Society. On April 24 the king's garden party took place at Necessidades, and in the evening there was a reception held on behalf of the government, to which the delegates sent by the various governments, as well as by schools of medicine and scientific societies, were invited. On April 25 there was a reception of the members of the Congress on behalf of the city. As above indicated, only a minority of the visitors attended the king's garden party and the government reception, but the other entertainments were open to all the members of the Congress. The sittings of the sections of the Congress took place in the School of Medicine from 8.30 A.M. to 2 or

3 p.m. on April 20, 21, 23, 24 and 25. The general meetings were held on the afternoon when no entertainment was provided.

Correspondence.

A SYSTEM OF CLINICAL RESEARCH DIRECTED PURELY TOWARDS THERAPEUTIC ENDS.

CAMBRIDGE, April 19, 1906.

Mr. Editor: Since the mention of my name in your editorial of April 5 counts me among those who "stand out on the basis of a single therapeutic principle," to whose sectarian perverseness you attribute the difficulties in the way of a solid front on the part of legitimate medicine "against the encroachments of manifest quackery," perhaps you will allow me the needless space to define my position, and that of some who unite with me, on the special points to which you refer so discouragingly. On these points I trust there may be reasonable discussion without reopening the old homoeopathic controversy.

The points referred to are those touching the feasibility of instituting a system of clinical research directed purely towards therapeutic ends. Hitherto, as you may be willing to admit, all clinical research has concerned itself mainly with questions of pathology, from which it is held that therapeutic measures flow by *a priori* reasoning. Within limits this is true, but beyond the province of surgery in its widest sense, these limits are—as the present state of therapeutics abundantly shows—exceedingly encircled. You will hardly deny that a very large proportion of all therapeutic measures, as applied to internal diseases, are purely empirical, or that within the field of pharmacotherapy the number of remedial agents other than those of empirical origin and application is deplorably small. In fact, there is no exaggeration in declaring the thought of the helplessness of the profession with no other aids at its command, save those derived from scientific knowledge, to be fairly appalling.* And here it cannot be out of place to remind you that empirical remedies in no wise change their character from the fact of their being prescribed by scientific men. On this point there exists, both within and without the profession, a very widespread and most pernicious error which it is one of the numerous functions of homoeopathy to aid in correcting.

Since you are clearly unfamiliar with the principles, history, literature and aims of homoeopathy, you must allow me to point out to you that this method of treatment deals with drug effects, the mode of action of which is for the most part unknown. These drug effects are those, both objective and subjective, produced in the healthy organism by drug poisons, and those found by experience to follow remedially in abnormal states on the exhibition of drugs under certain conditions. Here you will observe it to be a grave mistake to declare, as you do, for example, in the Address in Medicine before the Congress of Arts and Sciences at St. Louis in 1904, that homoeopathy had its origin like some other therapeutic medical systems, in speculative philosophy. Homoeopathy, in point of fact, had its origin purely in experience, partly in the experience of the profession, where Hahnemann's rare condition enabled him to trace at thought, at all available medical literature, and partly in the experience of the people from which some of the better therapeutics have sprung. If you will visit the truly excellent first edition of the *Organon*, you will find some twenty pages of such evidence, and a very useful introduction upon which to rest, without need of speculation or hypothesis, the case against the *a priori* reasoning for the elimination of error, and the establishment of a firm and positive foundation for a system of research in determining the effects of drugs on the healthy organism.

Here was the first, as it has remained the last, step in the * This may be safely said despite the fact that the present representation of the Relation of Therapeutics to other Sciences in the Nineteenth Century, by Prof. Laessle, in the *Scientia Medica et Pharmaceutica*, Internat. Congress of Arts and Sciences, St. Louis, 1904.

tion of the scientific method to pharmacotherapy, the same method which, in that field, you so persistently reject, although you so fully appreciate its value in all other departments of medical research.

You must pardon the mention of these points here despite the fact that they touch so closely on matters in controversy. As they are matters of fact, however, they call for no further discussion. Beyond them it is needless to go, for therein lies the region of theory and hypothesis on which it is idle to venture. If you will accept the scientific method as a legitimate means of building up therapeutic knowledge, we shall be on common ground from which to proceed towards further understanding. We do not declare it to be the only method of reaching therapeutic knowledge, but we do hold it of the first importance in dealing with all those countless instances of prompt and unexplained recovery, improvement and relief which have followed, and may still be seen by conscientious observers to follow, the exhibition of such remedies, the effects of which bear a close resemblance to the objective and subjective phenomena occurring in the great majority of such maladies as are capable of being favorably influenced by treatment.

Here is the fundamental point on which all other issues turn, including those of our reluctance to abandon our "separate school of practice with separate medical foundations and hospitals and all the appurtenances which go therewith." In the last analysis they are all reducible to the question of correct or faulty observations, and here alone can the test of soundness be applied. We fully agree with the distinguished author of the Address in Medicine above referred to, that all sound medical philosophy must rest on science, but science must rest primarily on facts. Generalizations and theories must follow later. They are indispensable, but may be disregarded here. What we ask first and foremost is that the facts, or, if you prefer, the observations, on which we found our law shall be subjected to well conducted clinical research before the majority of your "thinking men" shall be justified in their "attitude towards homoeopathy that its law has not been proved." Is anything in medicine, more particularly in therapeutics, proved or disproved without the scrutiny of facts? You do not believe in homoeopathy. We believe in it. Is it not fair to ask whether your skepticism has more sound to value than our credulity, despite your majority of "thinking men"? In fact, may we not claim to hold the stronger ground since we are able to marshal a large array of facts out of your own most modern literature bearing the contradiction we put upon them and thus showing the best evidence possible against your belief, while you have nothing to add your bald denial?

But neither believe nor disbelieve on of value in questions of science, however much they may influence practice. They are in point of fact, worth only so much as now, in this twenty-first century, when so often we are found to escape from the old certainties of our fathers, there are some efforts to be made to get the most trustworthy conditions to determine the objective or subjective effects of certain declared therapeutic measures, and our expectations.

We have no quarrel with the importance of looking at the great picture of the human organism as a whole, but we hold that the most intelligent method of doing so is not to regard the organism as a whole, but to regard it as a series of parts, each of which has partaken of the general picture, and for the purpose of which a very complete organization of the parts must be maintained. We hold that the only way to get the most trustworthy results is to get the most trustworthy facts, and that the only way to get the most trustworthy facts is to get the most trustworthy observations, and that the only way to get the most trustworthy observations is to get the most trustworthy clinical research.

With very truly yours,
W. W. WESSCHOTT, M.D.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, APRIL 14, 1906.

| CITIES. | Reported deaths | | CITIES. | Reported deaths | |
|---------------------|-----------------|--------------------------|---------------------|-----------------|--------------------------|
| | In each. | Deaths under five years. | | In each. | Deaths under five years. |
| New York | 1,620 | 536 | Quincy | 8 | 3 |
| Chicago | 621 | 172 | Waltham | 6 | 3 |
| Philadelphia . . . | 588 | 164 | Gloucester | 5 | 1 |
| St. Louis | — | — | Pittsfield | 6 | 6 |
| Baltimore | 230 | 70 | Brookline | 6 | 6 |
| Cleveland | — | — | North Adams . . . | 5 | 0 |
| Buffalo | — | — | Chicopee | 3 | 2 |
| Pittsburg | — | — | Northampton . . . | 5 | 2 |
| Cincinnati | — | — | Medford | 5 | 1 |
| Milwaukee | — | — | Beverly | 7 | 2 |
| Washington | — | — | Hyde Park | 4 | 1 |
| Providence | 85 | 26 | Newburyport | 4 | 0 |
| Boston | 234 | 75 | Leominster | 4 | 2 |
| Worcester | 35 | 4 | Meiose | 3 | 1 |
| Fall River | 40 | 18 | Woburn | 3 | 1 |
| Cambridge | 21 | 7 | Marlborough | 6 | 3 |
| Lowell | 29 | 12 | Westfield | 2 | 1 |
| Lynn | 21 | 4 | Peabody | 2 | 1 |
| New Bedford . . . | 13 | 1 | Revere | 2 | 1 |
| Springfield | 14 | 5 | Clinton | 1 | 0 |
| Lawrence | 18 | 4 | Attleboro | 3 | 2 |
| Somerville | 26 | 5 | Adams | 2 | 0 |
| Holyoke | 15 | 6 | Gardner | 2 | 0 |
| Frockton | 8 | 1 | Milford | 11 | 3 |
| Malden | 11 | 4 | Weymouth | 2 | 0 |
| Salem | — | — | Framingham | 3 | 0 |
| Chelsea | 12 | 3 | Watertown | 1 | 0 |
| Haverhill | 14 | 5 | Plymouth | 2 | 0 |
| Newton | 5 | 1 | Southbridge | 3 | 1 |
| Fitchburg | 17 | 6 | Wakefield | 3 | 1 |
| Taunton | 12 | 3 | Webster | 1 | 1 |
| Everett | — | 1 | | | |

CHANGES IN THE MEDICAL CORPS U. S. NAVY
FOR THE WEEK ENDING APRIL 21, 1906.

C. D. LANGHORNE, surgeon. Ordered to Washington, D. C., for duty in attendance on course of instruction at the Naval Medical School.

E. L. WOODS, assistant surgeon. Ordered to the Naval Academy.

H. T. NELSON, JR., assistant surgeon. Detached from the Naval Academy and resignation accepted to take effect April 14, 1906.

T. N. PRASE, assistant surgeon. Detached from the "Columbia" and ordered home to wait orders.

F. H. BROOKS, assistant surgeon. Ordered to the "Columbia."

W. F. SCHALLER, assistant surgeon. Ordered to the Naval Hospital, Mare Island, California.

SOCIETY NOTICE.

SUFFOLK DISTRICT MEDICAL SOCIETY. — The annual meeting of the Suffolk District Medical Society will be held at the Boston Medical Library, Saturday evening, April 28, at 8.15 P. M. Dr. Walter E. Fernald, Superintendent of the Massachusetts School for Feeble-Minded, will read a paper on "The Feeble-Minded in Massachusetts," with stereopticon illustrations. Light refreshments after the meeting.

L. R. G. CRANDON, M.D., Secretary.

APPOINTMENT.

MR. E. D. COOMAN has been reappointed a trustee of the Boston City Hospital for a term of five years.

RECENT DEATHS.

DR. MATTHEW T. GAFFNEY, of Newark, N. J., died on April 16. He was thirty-six years of age, and was graduated from the College of Physicians and Surgeons, New York, in 1897.

DR. JOSEPH HEDGES, a retired physician of Newton, Essex County, N. J., died on April 14 at the age of seventy-eight years.

DR. CHARLES FISK died at Greenfield, Mass., April 21, aged seventy-five years. He graduated at the College of Physicians and Surgeons in New York and had been in practice in Greenfield for fifty years. He had been a vice-president of the Franklin District Medical Society, and at one time was chairman of the Board of Health.

BENJAMIN HENRY BURRELL, M.D., M.M.S.S., of Roxbury, died in Denver, Colo., April 23, 1906.

BOOKS AND PAMPHLETS RECEIVED.

Studies from the Rockefeller Institute for Medical Research. Reprints. Vol. IV. 1905.

Diseases of Metabolism and of the Blood. Animal Parasites. Toxicology. Edited by Richard C. Cabot, M.D. An authorized translation from "Die Deutsche Klinik" under the general editorial supervision of Julius L. Salinger, M.D. Illustrated. New York and London: D. Appleton & Co. 1906.

Eyes and Ears that might be Saved. By Samuel S. Wallian, A.M., M.D. Reprint.

A Text-Book of Human Physiology, Including a Section on Physiologic Apparatus. By Albert P. Brubaker, A.M., M.D. Second edition, revised and enlarged. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1905.

The Ophthalmoscope and How to Use It. With colored illustrations, Descriptions and Treatment of the Principal Diseases of the Fundus. By James Thornton, A.M., M.D. Philadelphia: P. Blakiston's Son & Co. 1906.

Relaciou de los Titulos Méritos y Trabajos Científicos. Del Dr. S. Ramon Y. Cajal. Madrid. 1906.

Transactions of the American Surgical Association. Volume XXIII. Edited by Richard H. Harte, M.D. Philadelphia: William J. Dorman. 1905.

The Use of Sterin as a Food Preservative. By Edward T. Williams, M.D. Reprint.

La Lva Militare dal Punto di Vista Morale. Studio Critico sul Riconoscimento Degli Animali Nelle Operazioni di Reclutamento. Reprint.

Studies from the Bender Hygienic Laboratory, Albany, N. Y. Reprints. Vol. II. 1905.

A Review of Drug Consumption and Alcohol as found in Proprietary Medicine. By Ashbel Parmelee Grinnell, A.M., M.D. Reprint.

National Association for the Study and Prevention of Tuberculosis. Transactions of the First Annual Meeting, Washington, D. C., May 18 and 19, 1905.

Nature and Health. A Popular Treatise on the Hygiene of the Person and the Home. By Edward Curtis, A.M., M.D. New York: Henry Holt & Co. 1906.

Unconscious Therapeutics; or, the Personality of the Physician. By Alfred T. Schofield, M.D., M.R.C.S. Second edition. Philadelphia: P. Blakiston's Son & Co. 1906.

Transactions of the American Gynecological Society. Vol. XXX. For the year 1905. Philadelphia: William J. Dorman.

Department of the Interior. Bureau of Government Laboratories. I. New or Noteworthy Philippine Plants, IV. II. Notes on Cuming's Philippine Plants in the Herbarium of the Bureau of Government Laboratories. By Elmer D. Merrill. III. Notes on Philippine Gramineae. By E. Hackel. IV. Scitamineae Philippineae. By H. N. Ridley. V. Philippine Acanthaceae. By C. B. Clarke. Manila. 1905.

The World's Anatomists. By G. W. H. Kemper, M.D. Revised and enlarged. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1905.

Practical Rowing with Scull and Sweep. By Arthur W. Stevens; and The Effects of Training. By Eugene A. Darling, M.D. Illustrated. Boston: Little, Brown & Co. 1906.

Outlines of Medical Diagnosis. Prepared for the Use of Students, at the Harvard Medical School, Boston. Fourth edition. Boston: F. H. Thomas Co. 1906.

Food and the Principles of Dietetics. By Robert Hutchison, M.D. (Edin.), F.R.C.P. Revised edition. Illustrated. New York: William Wood & Co. 1906.

Department of the Interior. Bureau of Government Laboratories. A Hand-List of the Birds of the Philippine Islands. By Richard C. McGregor and Dean C. Worcester. Manila. 1906.

Surdité Spontanée Ancienne. Rééducation méthodique de l'oreille au moyen des diaphragmes. Par le Dr. Marcel Nattier (de Paris).

University of California Publications. Physiology. The Control of Galvanotropism in Paramecium by Chemical Substances. By Frank W. Bancroft.

Clinical Applied Anatomy or The Anatomy of Medicine and Surgery. By Charles R. Box, M.D., B.S., B.Sc. Lond., M.R.C.P. Lond., F.R.C.S. Eng., and W. McAdam Eccles, M.S. Lond., F.R.C.S. Eng. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1906.

Address.

THE PHYSICIAN'S DUTY TO HIS FELLOW-PRACTITIONER AND TO HIMSELF.*

BY WALTER LINDLEY, M.D., LL.D., LOS ANGELES.

The physician's duty to his fellow-practitioner and to himself makes the complex subject of my talk to-day.

The physician should be an educated gentleman. It is too late to talk to you of the Senior Class in regard to your own preliminary education. The die is cast as far as that is concerned, yet you will have your influence on many young men who are to follow in your footsteps. Urge all to secure a well-founded general education before beginning their professional course. The medical student who has the education that is represented by the degree of A.B. or B.S. is to be congratulated. The time will soon come when at least an experience of two years in a college of liberal arts will be required to gain matriculation in any reputable medical college. Speed the day.

Mathematics, English, Latin, Greek and chemistry are the foundation branches. Botany and zoology are both important. If any of you are unfortunate enough not to have had a well-rounded preliminary education, then you should take up at least two of these studies with a tutor or a correspondence school and keep on until you have secured that education that is expected from a gentleman in one of the learned professions.

Become thorough in the metric system of weights and measures. Learn to write your prescriptions in that system. This is very difficult for the elderly physician who was not taught this system, but you young men must learn it. Try to get to thinking in the metric system. The metric system has come into my life so recently that I have to translate kilogram into pounds and ounces and meter into inches before I have a real conception of how much they mean.

The metric system originated in France in 1790, and has been adopted by forty-two other countries, i. e., by all civilized and semi-civilized countries, excepting Great Britain, the United States and Russia. It was adopted by the United States Pharmacopoeia of 1890, and is largely used in many sections of the United States. It is generally conceded that the system, while simple and uniform, affords a facility of computation which renders it superior to all other systems of weights and measures.

1. It is orderly, clear and logical.
2. There are no specific trade tables, such as avoirdupois, wine measure, grain measure, etc.

3. The single ratio of ten is involved, thus making calculations extremely simple.

In order to minimize difficulties in writing prescriptions, as far as possible it has become the custom in things medical to use only two metrical terms, the gram (gm.) and the cubic centimeter (cc.).

Every first-class pharmacist thoroughly understands the metric system. It would pay you well to practice writing prescriptions in the metric system ten or fifteen minutes every evening. You do not need a teacher for this; you can teach yourselves.

Take advantage of every opportunity to learn the Spanish language. Mexico invites us, Panama will be the great avenue that we will travel. The South American republics will be brought nearer and nearer to us. The Philippine Islands and Porto Rico are part of the United States, while our relations with Cuba are bound to always be intimate. It is a beautiful, musical language. Learn it and there will be opened to you many doors to success that would otherwise be sealed.

If you have limited means, begin now and select book by book a general library. Spend an hour now and then in a second-hand book store, and get your Hugo and Goldsmith, your Eliot and Johnson, your Macaulay and Tennyson, your Dickens and Tolstoi, your Poe and Swinburne, and your books of reference. Buying your library this way, you will love each book as it comes to your grand salon where the old masters are your guests.

In regard to your medical library: Do not spend much money on it. Do not buy any systems of medicine to be paid for on the installment plan. Those installments will be sure to come due just when you are in the greatest financial stress. Systems of medicine are generally a delusion and a snare. Buy one good book now and then, not too often. Study what you do buy. Take at least two medical journals, one weekly and one monthly. Then, if you can afford it, take one special journal on surgery, obstetrics, nervous diseases, or whatever line you are most interested in. Keep ample notes of all your cases. These notes will make your most valuable library.

Whenever you have an interesting case, write it up for your medical society. Read and speak before your society whenever you can. Take occasion to speak briefly and concisely in public as often as possible. Practice public speaking on every possible audience. Naturally you may be ever so diffident, but you can soon educate yourself to think on your feet and to express yourself in a clear and interesting style. Speak slowly, enunciate distinctly, and pitch your voice according to the hall in which you may be speaking are the three cardinal points in delivery.

Financially you must have a little money, not too much, and then invest your savings judiciously. Do not be miserly, but live according to your station in life, even though it may be some time before you can save anything. Never keep over \$1000 in a savings bank. Savings banks are good for old women and children. Never invest your money in outside enterprises, like mercantile or manufacturing companies. Do not buy a farm. Do not invest in mining stock, oil stock, rubber plantations, or any of these big enterprises, the end of which no person can foresee. The best investments are town or

* Lecture delivered to the senior class of the College of Medicine of the University of Southern California.

city real estate, bank stock, township, city, state or national bonds. Go in debt for a lot. Study the location of the lot and be sure that you invest in the line of growth.

Very few men make money without going in debt. Do not go in debt for more than you know you can pay, and, when you do go in debt, pay, if it takes you years. Never speculate. Never invest in anything that is going to pay "big." Such propositions are invariably a gamble. Never go security for any man.

Do not be in a hurry to marry. The medical student, the interne, the young practitioner is very likely to be, to use the language of Balzac, "Like all unprotected boys, he loves the first woman who throws him a kind look." Wait until you have settled into a substantial practice, until your judgment is mature, until your tastes have become discriminating. Let me urge you to summon all of your will power to resist that youthful tide of passion that sweeps so many young men off their feet and results so frequently in an unfortunate *mésalliance*. The professional man has no time for marriage before he is thirty. If he graduates young, there is all the more reason that he should devote himself to post-graduate study instead of occupying his time with the anxieties, cares and affections of his wife and his offspring. It is due those who employ you in your sacred calling that you give these early years to professional preparation and that you, for the time being, sacrifice your personal desires for the felicities of domestic life. Marry, by all means; marry some good, pure woman, loyal and true, but do not marry until your education is somewhat rounded in practical experience, and you are thoroughly established professionally.

Attend to your patients carefully, thoroughly, conscientiously; charge reasonably; save and invest conservatively. By so doing, if you have health, you will accumulate a competence and may eventually become financially independent.

Your duty to your fellow-practitioner? Act as one gentleman naturally would to another. Rules and codes of ethics are only necessary for those who have not the instincts of gentlemen. Never envy another physician. There is just one way that you are justified in taking patients from another doctor, and that is by being better qualified than he. Yes, there is an additional thing you may do, and that is to be faithful in your office hours.

You should get the good will of the community in which you live. Become a part of that community. Attend the club, the church, the lodge. In other words do your part in carrying the burdens of your community. Take some part in the political party whose tenets come the nearest meeting your approval. All of these things you should do through patriotism and not through policy.

Take an active part in the medical societies. If you will attend regularly, read a paper whenever called upon, report cases, take part in discussions whenever opportunity offers, you will

find that your society is really a post-graduate school.

Help make your medical society; help build it up.

In your society, in your town and in your state be history makers. The intelligent physician is always expected to be a leader. Let your leadership be for the best interest of your profession and for the best interest of the community in which you live.

Do not be narrow and hide-bound in regard to the medicines you prescribe or the men with whom you consult. Take the homeopathist, eclectic, or masseur on his merit. Some of the best ideas a young practitioner will get come from some good old lady who has raised a family of children. Do not despise the fruits of experience. Sometimes these old ladies may puzzle you with questions. Just be deliberate about answering and they will answer their own questions. This method never fails.

There is a great deal being said now about not prescribing so-called proprietary medicines. You simply prescribe what is best for your patient, regardless of the preaching of the zealot who proposes that every person else must follow in his own narrow, contracted path.

In entering a new town you had better call on all of the physicians, if it is a small town, but if it is a city, call on the officers of the medical society and a few of the leading men.

Be ready to call in a consultant in every serious case, and in all cases where the patient or his friends show the least desire for additional advice. It is dangerous to tell a patient that you are willing to call in any person he wants. Tactfully endeavor to have some person called who is able and honorable. Do not start into a consultation determined that it shall be a mere form and with your mind irrevocably made up. Put yourself in a receptive state. Try to avoid discussing the case before the patient. After your consultant has examined your patient, you should both retire and privately decide the course of treatment to be pursued. In regard to the fee: It is very nice for the attending physician to collect the consultant's fee.

Do not be jealous and suspicious of older practitioners. Maeterlinck says: "A man who is good attracts with irresistible force events as good as he." If you are suspicious and envious of your fellow-practitioners, your own course will make them suspicious of you, and soon you will be working at cross purposes, and men who should be your friends will become your enemies.

In a recent address on "The Ideal Doctor,"¹ Dr. David W. Cheever, the Boston surgeon, who is really himself America's ideal doctor, said: "Altruism is sacrificing self to others, and egoism is sacrificing others to self. The relations between doctor and patient are so peculiar as to require a blending of altruism and egoism, of self-denial and self-assertion. . . . The ideal doctor looks after the interests of his brother physicians: he says no evil. . . . He who has a

¹BOSTON MEDICAL AND SURGICAL JOURNAL, Nov. 10, 1904.

healthy body, he whose mouth is shut, whose heart is kind, whose intentions are sincere, who does his best, who treats his patient as himself, who looks after justice as well as mercy in his dealings, is altruistic and egoistic both, is the ideal doctor." "Whose mouth is shut," -- do not ever permit yourself to be drawn into making an adverse criticism of a fellow-practitioner. It lowers you in the eyes of all who hear you. Although you might be honest in your criticism, yet there is a possibility that you may be unjust, because you cannot place full credence in what the laity tells you a certain doctor may say or do. If you are told that a brother physician has done you a serious injustice, do not believe the story, but go and see him and tell him the report.

The young physician without a *clientele* is likely to be hypersensitive and shut himself up in his shell whenever the older, prosperous practitioner approaches. Many times this extreme independence or false pride prevents the successful older man from extending a helping hand. Almost every busy practitioner wants several understudies. "I do not want to be a satellite to Dr. Jones," the stiff-necked young fellow may say. That is a bad spirit. While you are a "satellite," you will have an opportunity to gain knowledge, to gain experience, and to gain an acquaintance that will give you Dr. Jones's overflow, and thus will lay the foundation for a practice of your own. This may come slowly, but it will come.

To lay down rules for the conduct of gentlemen in their relations with each other is puerile. It is sometimes necessary to tell bores how to imitate gentlemen. The effort at imitation is laudable, but always transparent. The foundation of all ethics is the golden rule. When you enter the active practice of your profession, do so with the determination that you will deal mercifully, fairly and honorably with all people, and you will never need to study any code of ethics. For the sake of yourselves and your happiness in life, carry yourselves so that you will each day do the work that comes to your hand in the most thorough, unostentatious and beneficent manner possible, and you will thus leave to your children a noble heritage and add to the prestige and renown of this, your alma mater.

Original Articles.

THE TREATMENT OF JOINT DISEASE, BY PASSIVE CONGESTION.

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The introduction of any foreign substance into the tissues of the body brings about an hyperemia, and the most minute micro-organism will produce such a response. Thus it comes about that hyperemia is the essential feature in every pathological process. This reaction of the body is a useful effort of nature, and one must therefore

regard hyperemia as the most widespread of nature's healing processes. Nature works to produce a local hyperemia as a means of defense against her foes and accomplishes it either by increasing or by slowing the rate of the blood stream; by an increased rapidity of the blood stream where the process concerns a functional hyperemia which accompanies an increased activity of an organ; by slowing the stream where there is an injury to be made good or new tissue to be built up.

Between the rapidly flowing arterial stream and the slowly moving venous blood there is not only the most fundamental physical but also chemical difference. The rapidly flowing blood retains its fluid portions and its formed elements and sends them forward at an accelerated rate. It will be seen that this is needed in a functional hyperemia, where the increased work requires an increased supply of oxygen and the products of combustion which act poisonously and inhibitingly must be swept away. The slowly moving blood stream, on the other hand, sends its formed elements out into the tissues, where they can assume their activities. The combating of infection and the building up of tissue, therefore, is best served by passive hyperemia. A portion of the body is passively congested when its net-work of vessels on account of some obstruction to the venous outflow is more intensely filled with blood. Thus with few exceptions passive hyperemia is venous in contradistinction to active hyperemia which is arterial.

The first to make use of an artificially produced passive congestion for the purposes of healing was Ambrose Paré, who employed it to develop callus in ununited fractures. The treatment has been enormously extended by Professor Bier of Griefswald, and he has built up a technique which he has used in a vast number of cases. He is a most enthusiastic adherent of passive congestion, and employs it not only in all forms of acute and chronic joint affection, but has even extended its use to acute phlegmons, such as septic infections extending into the tendon sheaths. The method is so firmly associated with his name that in Germany it is always called the Bier Congestion.

The technique as it has been developed by Bier consists in the application of two or three turns of an Esmarch bandage about the limb above the affected joint. It should be applied just firmly enough to constrict the thin walled veins, but not enough to obstruct the arteries, or if at all only to a slight extent. The venous congestion thus induced extends not only through the superficial veins, but also to the deep ones. This is a condition which one can observe with a tourniquet which has been nas applied. When one sees a well developed hyperemia from all the deep tissues, even the bone marrow. The marrow cannot be directly influenced by a constriction around the surface and it must be that the blood is thus seeking a way of return at the wide channels there left open.

By means of more or less tight application of the band, all grades of congestion can be induced, from the light up to the severe. To obtain the mild grade, using a normal arm as an example, the bandage is put about the upper arm so as not to cause the slightest uncomfortableness. At first the veins on the back of the hand and on the anterior surface of the forearm appear prominent. The skin becomes a bluish to a rose color. In the palm a number of small white spots appear. By close application one is able to make out the fine network of veins in the skin. At the end of three hours the appearances continue about the same, except that there is a slight edema on the back of the hand. The pulse is full and strong and by compression with the finger the skin becomes white over the area compressed to immediately fill with venous blood when the pressure is removed. After twenty-four hours edema has extended to the arm. The skin maintains the same blue-red color. The subcutaneous veins, however, have become smaller. Their diminution in size is not due to their concealment by edema, as they are not the fully distended cords they were at first. That no obstruction to the return venous flow exists is shown by the arm becoming white again when it is repeatedly flexed and extended. A very important characteristic is that the temperature of the constricted extremity is made higher. This becomes much more noticeable when the congestion is applied to a pathologically inflamed part, when the temperature is raised several degrees. In contradistinction to the light grade of congestion there is the severe form where the bandage is placed much more firmly. With this form after a few minutes cinnamon red spots appear and these soon coalesce so that the white forearm becomes a cinnamon red color. After ten minutes there is a subjective feeling of weight and prickling, with changing sensations of cold and warm. Small carmine red spots appear in the forearm, which represent small hemorrhages. The limb begins to swell from the edema, which makes its appearance so early. After forty minutes the pain becomes so severe that the constriction can no longer be borne. In this form of congestion the temperature of the skin is lowered. It has been called by Bier the cold congestion in distinction to the lighter grade where the superficial temperature is elevated. This cold congestion is always to be avoided in treatment, as it is dangerous. In the great majority of cases the mild grade is applied, but occasionally where the period is a short one a form just between these two may be used.

For the practical application of the congestion an Esnarch bandage, made just long enough to encircle the limb two or three times at the desired tension and provided with a strap and a buckle at either end, is put just above the affected joint and secured by the buckle when the desired degree of congestion has been obtained. For the protection of the skin a few turns of a bandage may be interposed between it and the rubber. In

order to avoid a stasis of blood in parts of the body which do not need it, the limb which lies peripherally to the infected area may be snugly enveloped in a bandage.

This form of congestion is used in most cases of acute and sub-acute joints, continuously with short interruptions, in the beginning, while later the intervals between congestions are made longer. The greatest care should be taken that the so-called hot congestion is always obtained and that the congested limb is never cold to the touch. This congestion should never cause discomfort, but the patient should be able to go about his accustomed duties and forget the presence of the bandage. This mild constriction, however, is sufficient in an inflamed tissue to bring about a powerful hyperemia with edema.

With tubercular joints stasis is not kept up more than a period of an hour daily. Experience has shown that long periods of congestion produce marked edema and lead to the formation of cold abscess. A little severer congestion is produced in tuberculosis than where the treatment is applied for longer periods. The elastic bandage is placed preferably at a distance from the affected joint; if the wrist, for example, above the elbow. The subcutaneous veins become very prominent and the skin assumes a uniform bluish red color. Towards the end of an hour light prickling sensations appear in the hand, but there should never be discomfort. The portion lying peripherally to the constriction is not enveloped in a bandage. Recognizable edema does not as a rule appear with these short periods of congestion.

Bier was first led to the treatment of tubercular joints by congestion by the observation that in congestion of the lungs in insufficiency of the mitral valve there was relative immunity to tuberculosis, while in pulmonary stenosis where there is a marked anemia of the pulmonary circulation, tuberculosis was very frequently seen.

The most marked action of passive hyperemia in the treatment of joint disease is the lessening of pain. This effect is seen very soon after the application of the elastic strap. The motion of the joint, in so far as it is caused by muscle spasm, is indirectly influenced, the diminution of pain causing relaxation of the contracted muscles and consequently freer joint motion.

There is a killing off or at least a weakening of the infectious virus. The bactericidal effect of congestion is due to the properties of the blood serum, and has been explained by Bier on various theoretical grounds: by an increased number of leucocytes with enzymes wandering out of the congested veins, by the retention of the bacterial products of metabolism which are directly hostile to the organism, by increase by means of these metabolic bacterial products in the amount of the proliferating granulating wall which envelops the organisms and by the increased alkalinity of the blood making it a stronger bacteriicide.

In the inflammatory process the irritant which calls out the inflammation at first produces an increase in the rapidity of the blood flow and then

a slowing down of the blood current takes place, due to some agency which is entirely unknown. The congestion is an imitation of nature's healing process or it serves to strengthen it when nature is lacking, as this slowing down of the current is increased. Absorption is delayed by congestion, but one of the pupils of Bier has shown by experimental evidence that after the constriction is removed absorption takes place with much greater rapidity than before.

Through the kindness of Dr. Joel E. Goldthwait and Dr. Robert B. Osgood, I have had an opportunity of treating a small number of cases of joint disease from the Orthopedic Clinic at the Massachusetts General Hospital. They have almost all been ambulatory ones. In most of the tubercular cases some slight grade of fixation was worn, either a light plaster or a leather support. The proper degree of congestion was applied by ourselves at the hospital and then the patients were carefully instructed and taught how to apply the rubber straps at home. The congestion in these cases was not kept up longer than one hour in the twenty-four. The patients returned for inspection at frequent intervals, when the straps were reapplied to see that the proper amount of congestion was being obtained. The chief dangers in treating tubercular disease is from the formation of abscess and in cases with open sinuses from secondary infection. We have experienced both of these calamities. When considerable edema is produced by the treatment, the danger of abscess formation is greater. When an abscess has formed it is incised and allowed to drain and treatment is during this time suspended. When edema is a noticeable feature of the treatment, the attempt should be made to control it as much as possible by elevating the extremity in the interval of treatment. Great care should be used with open sinuses to prevent secondary infection, and these cases should be handled with the most rigid aseptic precautions.

No rule can be given in regard to the grade of joint tuberculosis which will react under congestion. Often the most advanced disease which will at first sight be considered doomed for amputation will clear up under this form of conservative treatment. Cases with well advanced lung disease or with amyloid will do better with amputation. The treatment must be considered an adjunct to mutilating operations rather than a substitute. It is an individual treatment, and its success depends on the quality of the blood which the individual presents to combat the disease.

In acute or sub-acute inflammations the best results are obtained in gonorrhoeal joints, especially in those which tend to ankylosis or where the inflammation leads to bony stiffness. In these not only the joint but the contiguous structures, especially the tendons, are involved. A relatively weakly applied constriction produces a high grade of congestion. After an hour's application the pain is much diminished or has disappeared, and where formerly the least

motion was painful, one can, after the congestion has been kept on a short time, make cautious passive motion without producing pain. In severe cases we must keep congestion applied ten to twelve hours. When pain is severe during the night the strap can be worn then. The main rule holds here, that the bandage should not produce pain, but should be loose enough so that it is comfortably borne. Fixation apparatus can be applied if the pain is severe. In the interval between the application of the strap the limb should be elevated to reduce the edema which the constriction has produced. After the acute symptoms have subsided, massage and passive motion should be begun to hasten the absorption of the inflammatory products. In chronic hydrops after acute inflammation no benefit can be obtained from congestion.

The duration of the congestion in acute and sub-acute joints other than tubercular depends on the effect it produces. If the patient states that after one or two hours' congestion the pain is relieved and motion is increased, this length of time is sufficient, but if the pain soon returns a longer period of congestion must be maintained.

The cases in detail are as follows:

CASE I. Tuberculosis, right ankle. Boy, sixteen years old, for past seven months had suffered from gradually increasing pain and swelling of right ankle. The joint has been fixed in plaster for two months.

Jan. 28, 1905. The right ankle is fusiform in shape and swelling extends to the base of the toes. The skin is reddened and over the dorsum of the foot pits on pressure. The surface temperature is increased. Measurements about the malleoli, 12 inches. Atrophy of right calf. Passive motion causes pain; 15° of flexion, no extension. No pronation or supination.

X-ray shows blurred shadow of tarsus with irregular outline of ends of bones forming ankle joint. Much bony atrophy. Trabecular structure only indicated. No distinct bony focus. A tubercular affection of ankle joint with periarticular involvement.

Congestion for two hours daily. Plaster fixation.

Feb. 7, 1905. A fluctuating area about the external malleolus has appeared. The congestion produces considerable edema and the leg must be elevated between the treatments. This was one of our first cases and we did not appreciate the importance of not carrying the congestion too far. An abscess formed under the external malleolus and broke on Feb. 28. Congestion was omitted for two weeks until the discharge from the sinus diminished.

March 15. Daily periods of congestion for one hour again resumed.

June 10. Discharge from sinus very slight. Redness of skin has disappeared. No fluctuation and little edema on dorsum. Motions of ankle do not cause sensitiveness. Plantar flexion about 20° dorsed to right angle.

During August congestion was omitted and the foot washed daily in sulpho-naphthol. Congestion again resumed Sept. 2.

Sept. 26. Almost no discharge from sinus. Dorsed flexion to right angle and about 45° of motion in plantar flexion.

X-ray shows considerable regeneration, a nearly round ankle joint, as shown by darker shadow. Bony trabeculae more distinct. The articular surface more irregular in outline, showing that some bony destruction has taken place.

Jan. 6, 1906. Sinus under malleolus has healed. No swelling on dorsum. About 40° plantar flexion. Measurements about malleolus, 11½ inches.

X-ray. Outlines of ankle joint shown by intense shadow, which represents cicatrizing bone tissue. Trabeculae in tibia and fibula more clearly defined.

CASE II. Tuberculosis, left wrist. Boy, twelve years old, who had bruised his left wrist in a fall eight months before. Ever since then the wrist had been swollen. He had been treated during this time with light fixation.

There is a marked family disposition to tuberculosis.

March 18, 1905. On back of left wrist is an abscess the size of a hen's egg. The skin covering the back of the hand is reddened and the palm is edematous. The edema extends into the fingers. The joint is absolutely fixed and the least motion, even in the fingers, produces pain. Measurements over styloids, 8½ inches.

X-ray. Hazy outline of whole carpus. Wide separation of bones by exudation. Atrophy of metacarpals most marked at carpal ends and of radius and ulna at lower ends.

The condition represents a diffuse process involving all the carpus.

Congestion for daily periods of two and one-half hours. Light fixation.

April 1. Abscess broke and congestion was omitted until discharge diminished.

April 15. Much less discharge from sinus on back of hand. Congestion for daily periods of one hour.

May 6. Less discharge from sinus, less swelling and redness of skin. Styloids measure 7 inches. Motions of wrist cause less pain. Flexion to 45°, no extension. Can fully flex two distal finger joints, but no motion at metacarpophalangeal.

During August congestion was omitted and daily soaks of sulpho-naphthol given.

Sept. 5. Superficial redness and tenderness have disappeared and there is no discharge from the sinus. Congestion for one hour daily.

Dec. 9, 1905. Sinuses have completely healed. Passive motion of wrist causes no pain. Styloids measure 6 inches. Motion in flexion, 45°; little extension. Metacarpophalangeal joints can be almost fully flexed.

X-ray. Bony outline of carpus is distinct and the normal trabeculated structure of the bones is visible. Carpal bones are now close together, as exudation between bones has disappeared.

Regeneration process shown in bony reproduction of lower end of metacarpals.

CASE III. Tubercular dactylitis, finger. Boy, two years old, was first seen on Feb. 13, 1905. Six weeks before, the middle finger of the right hand was jammed in a door, and since then the distal joint had been swollen.

The last knuckle of the middle finger is fusiform in shape and is red, tender and painful on motion.

X-ray shows tremendous involvement of soft parts about second phalanx, middle finger, but picture is too poor to show bone lesion.

General hygiene and fixation for finger.

March 13. As there is no improvement, the finger was incised.

May 13. The end of the second phalanx protrudes through an unhealthy looking wound on back of the finger. Since operation it has been dressed and fixed on a splint. It seemed hopeless to save the joint, but it was thought wise to try what congestion could accomplish, and it was applied for periods of an hour daily. Dressed with sulpho-naphthol.

May 27. Bare bone entirely covered by healthy granulation. Splint and congestion.

June 27. Exuberant granulation on finger, which is kept fixed and congestion applied daily.

Sept. 12. Except for small granulating area, finger entirely healed. Splint left off and congestion was omitted.

Nov. 11. Finger completely healed and there is only slight deformity. Good control of terminal phalanx in flexion and extension.

X-ray. Bone shadow of second phalanx of middle finger shows more lime salts than in other bones, and presumably represents bone cicatrix.

CASE IV. Tuberculosis of wrist and ankle. Man, forty-one years old, nine months ago first noticed swelling and tenderness in right wrist and left ankle, which increased rapidly, so that he soon had complete loss of function in both. He has more or less cough, and has lost weight and strength. Spent the previous summer in the country, with much improvement generally, but none locally.

March 13, 1905. Came into the hospital wards. The right wrist is spindle-shaped and over the flexor tendons are fluctuating areas. On the back of the hand is a sinus with slight discharge. There is little motion in wrist joint and almost none in fingers. Much edema of hand and fingers. The left foot and ankle are swollen, the skin is reddened, and there is much edema on the dorsum. Dorsal flexion of ankle much limited, while plantar flexion is freer. Measurements about malleoli, 11½ inches, around foot over scaphoid bone, 12 inches.

X-ray of wrist shows complete necrosis of joint surfaces and of carpal bones.

X-ray of ankle shows marked periarticular thickening, obscuring bone shadow. Irregularity of posterior portion of upper articular surface of astragalus. Atrophy of trabecular structure of lower end of tibia. No definite bony focus, but a diffuse involvement of ankle joint and tarsus.

There is a patch of consolidation at apex of the left lung.

March 20. Congestion of wrist and ankle for one hour, morning and afternoon. No fixation. Ankle and hand are kept elevated between the periods of congestion.

April 27. Congestion has been applied twice daily for one hour. Measurements show a slight decrease in swelling of foot and hand.

June 12. Congestion continued twice a day for hourly periods. Three days ago, preceded by a chill, wrist became painful. The skin over the hand and wrist is red and there is much more swelling. There is a discharge of creamy pus from the sinus on the posterior surface from which a culture of staphylococcus aureus and streptococcus was obtained. There is less swelling in the foot. Measurements about malleoli, 10½ inches and about foot over scaphoid bone, 11½ inches.

The x-ray of the foot shows an absence of any considerable amount of periarticular thickening. Bony outlines more clear. The upper articular surface of the astragalus shows smooth outline. Atrophy of bone structure in lower part of tibia persists, with slight extension into diaphysis.

The right arm was amputated above the elbow.

July 12. Patient left the hospital with amputation wound healed. Congestion omitted since operation.

Jan. 10, 1906. Patient reports by letter. Since leaving the hospital he has been living on a farm in the country, and he has followed out the congestion of his ankle conscientiously. The swelling has nearly all disappeared, and it is no longer hot, as formerly.

Jan. 1 he stood erect with his heel on the ground and bore all his weight on the foot for the first time in fourteen months. Since then he has walked on it several times with very little pain. No fixation has been worn.

CASE V. Tenosynovitis, extensor tendons, both wrists, tubercular. Woman, twenty-one years old, for two years has suffered from an obstinate tenosynovitis of both wrists. She had been treated without improvement by intermittent fixation during this time. She had previously had an affection of the right knee which was thought to be tubercular.

May 16, 1905. Both wrists are slightly swollen, the right more noticeably, and there is much pain on motion. On motion of fingers and wrist there is palpable crepitation over extensor and flexor tendons. Passive motion, left wrist, 45° in flexion; 20° extension; 20° adduction; slight abduction.

Right wrist, 20° in flexion, 10° extension, 10° adduction, no abduction. X-ray was negative. Light fixation of both wrists. Congestion for three-hour periods daily.

June 10. No pain on motion of wrists. Much less swelling in right, none in left. Motions of right wrist, 50° flexion, 45° extension. Those of left almost complete. Fixation of left wrist omitted. Congestion of both for three hours daily.

Aug. 13. Left wrist remains without symptoms. The right still has intermittent periods of pain, and there is slight swelling in extensor tendons. Fixation continued. Congestion kept up for daily periods of three hours.

Oct. 17. Motions of both wrists free, without symptoms. Fixation omitted. Congestion continued.

Nov. 16. No symptoms. Exercise with Zander machines. Congestion omitted.

Dec. 5. Both wrists show normal amount of motion. There is slight crepitation over right extensor tendons on motion of fingers. Has no pain and uses both wrists without symptoms.

CASE VI. Infectious arthritis, left elbow, gonorrheal. Woman, twenty-one years old, who says that eleven days ago, after suffering much pain in the right shoulder, the left elbow became swollen. The swelling was increasing and it was very painful. The least jar produces severe pain.

May 20, 1905, the left elbow is swollen and the skin over it bright red, with increase in temperature. Fluctuation on either side of the olecranon. Arm held at right angle, and there is about 5° of motion in flexion and in extension. Joint aspirated and 12 cc. sero-purulent fluid removed, from which a pure culture of gonococci was obtained. Congestion for two periods of one hour.

This was a hospital case and it was possible to supervise the congestion personally.

May 24. Periods of congestion increased to eight hours twice daily. There has been a very great diminution in the pain and joint motion is much freer. She is able to extend the arm fully. Edema over forearm and back of hand.

May 28. Pain has returned. Edema increased. Congestion omitted for two days to allow absorption of edema.

May 30. Less edema. Congestion for two eight-hour periods again resumed.

June 5. Inner portion of joint capsule has become infiltrated, brawny induration extending for two inches above the internal condyle. Edema of forearm and hand more marked. Axillary glands enlarged. Congestion omitted. Ice bag and elevation of arm.

June 10. Edema back of hand and forearm still

persists. Much pain. Congestion resumed for one-hour periods three times daily.

June 12. There is less superficial tenderness and no pain. Swelling less. Congestion for two-hour periods three times daily.

June 15. No tenderness about joint, but brawny induration still persists. Fairly free motion. Congestion increased to three-hour periods three times daily. The edema of the forearm and hand which it causes is well marked.

June 20. Passive motion in extension to 160° in flexion to right angle. No tenderness. Cautious massage begun on upper and lower arm with a little passive motion. Still considerable edema in forearm. Congestion for two eight-hour periods.

June 24. Induration about joint has softened. Congestion for three four-hour periods. Daily massage.

July 1. Massage and congestion have been continued daily. Patient left hospital.

July 22. Patient seen to-day. Is able to fully extend arm. Flexion at elbow somewhat limited. Very little swelling and no tenderness.

CASE VII. Infectious arthritis, right wrist, gonorrheal. Woman, forty years old, was first seen as a ward patient April 8, 1905, with a swelling of the right wrist, which came on suddenly eight days ago. One day before the left knee became similarly affected. The right wrist and left knee are very much swollen, painful and tender. The knee joint very much distended. She was given salicylates for two days without result.

April 9. Knee was aspirated and 90 cc. of sero-purulent fluid withdrawn from which gonococci were grown in pure culture. Patient left the hospital before treatment could be commenced.

April 27, 1905, she appeared as an out-patient, complaining of the right wrist. The right wrist is swollen both anteriorly and posteriorly, and is very tender. There is about 5° of motion in flexion, and in extension 6½ inches over styloids.

The left knee contains a slight amount of fluid, the capsule is rather flabby, but not thickened. There is free passive motion.

Congestion of wrist one hour daily.

May 2. There is twice as much motion in wrist and much less periarticular tenderness. Congestion for two hours daily.

May 9. No periarticular tenderness and very little swelling. Styloids measure 6½ inches. Motions of wrist 15° in extension and 25° in flexion. 4° of abduction and adduction. Congestion increased to eight hours daily.

Dec. 9, 1905. Patient reports that she kept up treatment for ten days after leaving the hospital, and that her wrist soon became normal. She now has no trouble in either wrist or knee.

CASE VIII. Infectious tenosynovitis, Achilles tendon, gonorrheal. Man, eighteen years old. He has had two attacks of gonorrhea. For eight months has complained of pain in left heel so that he has been unable to walk. He was treated with massage and passive motion for two months without relief.

Sept. 13, 1905. There is tenderness and swelling on both sides of the Achilles tendon of the left foot. Passive motion of foot limited and painful. Tenderness along bottom of os calcis.

X-ray shows no periosteal thickening.

Congestion for three-hour periods daily.

Sept. 24. No tenderness in os calcis. Patient unable to walk without pain. Slight swelling at insertion of Achilles tendon, but much less tender. Congestion three hours, as before.

Oct. 5. Swelling of Achilles bursa very slight and motion causes no pain. Has started work which requires constant use of ankle without any inconvenience.

CASE IX. Gonorrheal periostitis, both os calcis. Man, twenty-five years old, complained of pain in both heels, which had come on in three weeks previously and was growing worse. He was not able to walk without much pain. Had gonorrhea twice, the first time six years ago, and the last one and one-half months ago.

Aug. 19, 1905. Both heels are normal and there is no tenderness to pressure. Patient able to walk without discomfort.

CASE X. Chronic synovitis, left knee, gonorrheal. Man, thirty years old, who complained of swelling and pain in left knee for eight months.

Jan. 26, 1905. The left knee is distended with fluid, and there is thickening of the capsule. Motions are almost normal. Congestion for two-hour periods daily.

April 11. Congestion has been given daily without

The results of treatment obtained in these cases may be seen by the following table:

| CASE. | SEX. | AGE. | REGION AFFECTED. | DISEASE. | DURATION BEFORE TREATMENT. | DURATION OF TREATMENT. | DAILY LENGTH OF CONGESTION. | CONDITION BEFORE TREATMENT. | CONDITION AFTER TREATMENT. |
|-------|--------|------|-----------------------------|---------------|----------------------------|------------------------|-----------------------------|---|---|
| I | Male | 16 | Right ankle | Tuberculosis. | 7 months. | 11 months. | 1 hour. | Foot and ankle swollen. Little motion in ankle joint. Atrophy of all bony structure. | No swelling of foot, little of ankle. Slightly increased motion in ankle joint. Much bony regeneration. |
| II | Male | 12 | Left wrist. | Tuberculosis. | 8 months. | 9 months. | 1 hour. | Hand and wrist much swollen with large abscess. No motion in wrist or fingers. Exudation between carpal bones. Bony atrophy. | No swelling of joint. Fairly free motion in wrist and fingers. Absorption of exudation. Much bony regeneration. |
| III | Male | 2 | Finger. | Tuberculosis. | 4½ months. | 6 months. | 1 hour. | Phalanx bare and exposed. Terminal joint of finger useless. | Finger healed with slight deformity. Good control of terminal phalanx. Bony regeneration. |
| IV | Male | 41 | Right wrist. Left ankle. | Tuberculosis. | 9 months. | 10 months. | 2 hours. | Right wrist, bony necrosis of carpus, with open sinus. Left ankle, spindle-shaped, with swelling of foot. Periarthritic exudation. Diffuse involvement of ankle and tarsus. | Right wrist amputation. Left ankle. Little swelling of foot, able to bear weight on it. X-ray (at end of 3 mos.). Absorption of exudation. Bony regeneration. |
| V | Female | 21 | Both wrists. | Tuberculosis. | 2 years. | 7 months. | 3 hours. | Slight swelling both wrists with much pain. Limited motion. | No swelling. No pain. Normal motion. |
| VI | Female | 21 | Left elbow. | Gonorrhea. | 11 days. | 4 weeks. | 8 to 20 hours. | Acute suppurative synovitis with capsular infiltration. No motion. | Absorption of exudation. Little capsular thickening. Motion normal except slight limitation in flexion. |
| VII | Female | 40 | Right wrist. | Gonorrhea. | 4 weeks. | 4 weeks. | 2 to 8 hours. | Acute synovitis with periarthritic involvement. | Absorption of exudation. Good functional joint. |
| VIII | Male | 18 | Left Achilles bursa. | Gonorrhea. | 8 months. | 3 weeks. | 3 hours. | Tender and swollen Achilles bursa. Tenderness in under surface of calcis. Pain on motion of ankle joint. | No tenderness, and slight swelling bursa. No tenderness in os calcis. Motion of ankle without pain. |
| IX | Male | 25 | Both os calcis | Gonorrhea. | 3 weeks. | 5 weeks. | 2 hours. | Redness and tenderness both heels. Walking painful. | No tenderness. Walks without pain. |
| X | Male | 30 | Left knee. | Gonorrhea. | 8 months. | 10 weeks. | 2 hours. | Fluid in knee joint. Thickening of capsule. | No diminution of fluid, nor in thickening of capsule. |

July 7, 1905. There is slight redness in the skin of both heels and marked tenderness to pressure over both these regions. All the joints are negative with the exception of slightly guarded motion in the spine in the lower dorsal and lumbar regions. Inguinal epitrochlear and cervical glands palpable. There is a purulent urethral discharge.

Congestion applied to both ankles two-hour periods daily.

July 20, 1905. Area of tenderness under right os calcis has disappeared, while left is somewhat sensitive. Congestion on left foot only for three-hour periods.

influence on the amount of fluid in the joint. The only effect noted was a diminution in the pain.

Our experience in this case are in accord with the statement of Bier, who says that congestion is fruitless in cases of chronic hydrops.

The cases on which this report is based are few in number. Congestion was started in many more, but from lack of conscientious application of the bandage and from failure to attend the clinic, only this small number could be collected.



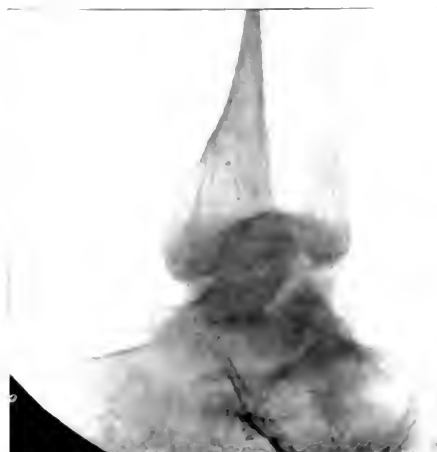
CASE I. Dec. 27, 1904. (Fig. 1.) Anteroposterior view. Large outline of effusion. The femur shows marked atrophy. There is a large, dark, irregular mass in the ankle joint with perforation of the bone.



CASE I. Dec. 27, 1904. (Fig. 2.) Lateral view. Large outline of effusion. The femur shows marked atrophy. There is a large, dark, irregular mass in the ankle joint with perforation of the bone.



CASE I. Nov. 1905. (Fig. 3.) Anteroposterior view. Intense chondrocalcinosis. The femur shows marked atrophy. There is a large, dark, irregular mass in the ankle joint with perforation of the bone.



CASE I. Nov. 1905. (Fig. 4.) Lateral view. Intense chondrocalcinosis. The femur shows marked atrophy. There is a large, dark, irregular mass in the ankle joint with perforation of the bone.



CASE II. Nov. 11, 1905. - Hazy outline of all carpal bones. Wide separation of bones by exudation. Atrophy of metacarpals, especially carpal ends, and of radius and ulna. Condition represents a diffuse process in carpal bones and articulations. No distinct bony focus.



CASE II. Sept. 2, 1905. - Bones show more intense shadow and bony outlines more clearly defined. Trabeculae more distinct.



CASE II. Dec. 9, 1905. - More distinct outline of all bones. Bone structure especially in radius and ulna more clearly defined and cortex is becoming thicker.



CASE II. Jan. 1, 1906. - Still more distinct outline of bones with more clearly shown trabeculae. This is better seen in carpal bones between which there is little open space, showing that exudation has been absorbed.

Regeneration process resulting in reproduction of bone seen in long tongue-like process of 2d metatarsal running between trapezoid and scaphoid.

little toe, and especially so if, as is so often the case, the skin is cut or torn. It is well known to those who have studied the habits of the chigger that the insect invades abraided or irritated surfaces oftener than sound skin. The fold of skin under the proximal joint of the little toe corresponding to the edge of the web between the toes is the point where wounds are oftentimes made by the sharp grasses, etc., through which the barefooted native walks and runs. The principal reason for this in the African is that the little toe of barefooted negroes lies separate from the others at an angle due to anatomical reasons connected with flatfootedness. As I have said, chiggers are oftentimes found on the under surface of this toe even when all the toes are intact. When wounds are once made here, however, the chiggers persistently invade them and must be removed constantly. While I do not wish to be read as advocating *S. penetrans* as the sole cause of anihum, it seems to me that these insects must play a part (in some instances, at least) in the continued irritation which, especially in blacks (who have a fibrogenetic tendency), may lead to the contracting fibroses occasionally resulting in the spontaneous amputation known as anihum. Such a theory goes far to account for the geographical distribution of the disease which is particularly common in the two great homes of the chigger, viz., tropical America and Africa.

The above conjectures which are, I admit, founded on slight evidence are not put forth in a dogmatic spirit but merely in the hope that they may prove suggestive to those working on the etiology of tropical diseases.

SUPPLEMENTARY NOTE ON A SPIROCHAETE FOUND IN YAWS PAPULES.*

BY F. C. WELLMAN, M.D., BENGUELLA, ANGOLA, AFRICA.

SEVERAL weeks ago I sent to Professor McFarland a paper in the course of which I mentioned the fact that I had found *spirochaetæ* in the papules of a case of yaws.

Only yesterday there reached me the report of the meeting of the British Medical Association at Leicester. At that meeting Dr. Aldo Castellani announced¹ the discovery of *spirochaetæ* in two cases of yaws in Ceylon. One of his observations dates back as far as February, 1904. My independent discovery of this organism in yaws papules (which may now be regarded as a confirmation of Castellani's previous observation) only dates from July 14, 1905. So I have thought it worth while to publish this additional note which will serve to obviate any misunderstanding that might arise from the tenor of my previous paper which was on its way to America before Castellani's announcement reached me.

It is significant that this observation (which has been spoken of as "one of the most important discoveries of recent times, considering the fact

that the *Spirochaeta pallida* has been found by Schaudinn in syphilis, and considering the relation said to exist between yaws and syphilis"²) should have been made almost simultaneously in two such widely separated countries as Ceylon and West Africa. It is to be hoped that observers in all parts of the tropics will avail themselves of every opportunity to thoroughly investigate the matter.

I have sent a statement similar to the above to the *Journal of Tropical Medicine*, London.

THE INFLUENCE OF DAMPNES OF SOIL AND CLIMATE ON THE DISEASES OF RESPIRATION.*

BY HENRY J. BARNES, M.D., BOSTON.

FORTY-THREE years ago the late Dr. Henry I. Bowditch of this city, in an address before the Massachusetts Medical Society, after a very laborious inquiry throughout the state, concluded "a residence on or near a damp soil, whether that dampness be inherent in the soil itself, or caused by the percolation from adjacent ponds, rivers, meadows, marshes, or springy soil, is one of the primal causes of consumption in Massachusetts, probably in New England and possibly in other portions of the globe." To this address and the report of Dr. Buchanan of England, in 1867, on the distribution of phthisis as affected by dampness of soil, reference is often made by writers of textbooks now in use, as authority for the opinion, dampness is not only a cause of this disease but others of respiration. Since the recognition of the bacillus of tuberculosis by Koch in 1882, dampness can only be considered a predisposing or contributing cause by authors quoting from the works of Drs. Bowditch and Buchanan. Little if any effort is made to show why this condition of soil should cause disease, although Dr. Billings writes, "It would be easy to construct a plausible theory in connection with the supposed cause of phthisis by a bacillus."

If the bacillus of tuberculosis, or any of the known pathogenic organisms causing disease of the respiratory tract, can preserve their virility in a damp soil, of which there is much doubt, chiefly because of the bactericidal influence of sunlight, the condition of dampness must be unfavorable for their transportation to the respiratory tract. Their presence in indoor air has been abundantly demonstrated, they may be rafted on particles of dust, but how they would be detached from damp surfaces is difficult to understand, unless released, and transported by an intermediary host of which we have little evidence. So long, then, as they remain in or on a damp soil they can have no influence on the organs of respiration.

If damp soil, then, is a factor in promoting diseases of respiration, it must be through the changes it produces in the air in the vicinity of

* This paper by Dr. F. C. Wellman as received by us Dec. 7, 1905. Owing to a misunderstanding its publication has been delayed.

¹ On the Presence of *Spirochaetæ* in two Cases of Ulcerated Parani ("Yaws"). Abstract in *Journal of Tropical Medicine*, Aug. 15, 1905, p. 253.

² *Brit. Med. Jour.*, Aug., 5, 1905, p. 282.

* Read at the meeting of the American Social Science Association, 1905.

such a soil. In warm or hot weather it may produce a fog, raising the relative humidity several per cent, either by evaporation, a lower temperature, or both. The presence of fogs over low, wet lands, and their absence from adjacent elevated lands, is very frequently observed, and employed by many persons as the only means of measuring the dampness or dryness of the air. Very erroneous conclusions result from this method of measuring moisture, for with a high relative humidity over the high lands, a fraction of one degree lower temperature over the low lands is sufficient to cause a fog. For example, the air at 70° temperature, 98 relative humidity without fog, will be 100 R.H., or saturated, if the temperature is lowered half of one degree, and a fog may result. As the difference is usually much more than this, the appearance of fogs will be of corresponding frequency over low lands. Fogs are probably more frequent in Boston than at Sharon or Rutland, yet the mean relative humidity of the three places is not materially different, the mean annual of each being between 70% and 74%.

In winter, when the temperature is at or below freezing, from the frozen ground, or the snow and ice, there is so slight an evaporation as to cause no appreciable increase in the relative humidity, and fogs are usually occasioned by warm currents of air passing over cold areas of surface and producing the same results over high and low lands, namely, a saturated atmosphere. The presence of fogs, then, while they are indicative of dampness, their absence is of little or no value in estimating the dryness of the air; only by measuring the relative humidity can we ascertain the actual condition.

The rain-fall is often mentioned as indicative of a damp climate. This is a worthless guide in the temperate zone, where rain-fall occurs at no particular periods of time. The relative humidity may be comparatively low for a period of excessive rainfall, or high for a period of little rain, as exhibited in the Sharon report for April 1904, when the precipitation amounted to 8.62 inches and the mean relative humidity for the month was 68, while that for September, 1903, was 127 inches of rain, with a monthly mean humidity of 78, thus showing a month with nearly seven times the rain-fall of another having a relative humidity of 10% less. While it appears then, in the restrictive meaning, local conditions influence but slightly the relative moisture of the air and only in warm weather mountain ranges, ocean, ocean currents and desert regions do occasion great variations.

The eastern coast of Great Britain has an annual mean relative humidity of 85%, caused by the gulf stream and elevated lands and is considered a damp climate. In New Brunswick at the mouth of the St. Lawrence 85 is the mean. Areas east of the coast range on the Pacific are examples of very low percentage of moisture, of which Fort Yuma, Ariz., is one, with an annual mean of 35%.

Denver, Col., having a mean of 50%, has what is

considered a dry climate; and except for peculiar topographic locations, other parts of the United States have what is called a medium climate as regards moisture, Boston, Albany, Buffalo, Chicago, St. Paul, Washington and New Orleans have an annual mean between 70% and 75%.

For purpose of classification we may say that all climates above 80 relative humidity are damp, about 70, medium, and 50, dry, below 45, arid. What effect, if any, this great variation has on death-rates from tuberculosis and other diseases of respiration is impossible to ascertain, because density of population, occupation, social conditions, etc., are all admitted to be very influential factors, of which we have insufficient record. We do know, however, that no condition of climate prevents them.

To a "damp and cold" climate is often attributed the prevalence of diseases of respiration in the winter, and many mortuary tables are cited showing the death-rate from these diseases is enormously increased during the winter months. This falls far short of proving weather, or dampness, is the cause. In the winter of 1903 and 1904, New York City exhibited an unusually high death-rate from pneumonia, Boston, a comparatively low rate. The meteorological conditions were practically alike, as reported by the weather bureau. We have enough cases of this disease in hot climates and in hot weather to prove a low temperature and a high relative humidity are unnecessary to cause this disease. Its prevalence in winter is better accounted for by the more intimate relations for the purpose of shelter, for this is often an infectious disease.

During the Civil War, in 1861, six thousand colored troops were quartered in barracks at Fort Benton, Mo. From January to May, 700 cases of pneumonia occurred among these troops and the epidemic was stopped only by breaking up the barracks. The surgeons in charge reported, "men occupying the same bunks with those affected were very much more liable to be attacked than those more remote." In 1871, 75 cases occurred among 735 inmates of a prison at Frankfort, Ky. Netter reports 30 cases among persons sleeping in the same bed with the sick. Much more evidence could be produced showing this to be a transmissible disease and should therefore be reported to the health authorities as such. Dr. Loomis writes Pepper, vol. 2, p. 315: "The more dense the population, the greater the pneumonia rate, which rainy seasons, or moist districts do not influence. Wind, weather, seasons or race have but slight influence. Resistance of the individual is the most important factor."

Report of epidemic influenza. This prevails irrespective of soil, season or climate. Tinkler says: "We cannot at the present time predict the appearance of this disease from any existing atmospheric conditions." Pepper, "There is no known condition of climate, soil, elevation or season which affects it." Oliver: "Outbreaks of this disease are independent of all seasonal or meteorologic conditions." C. J. Wilson.

"The condition of the air as regards moisture or dryness does not influence the spread of this disease. It has occurred at sea, on the low sea coast, and in the driest climates, for example, upper Egypt, and has no known connection with any known atmospheric condition."

Tuberculosis.—That this is an infectious disease need only to be stated. If the tubercle bacilli are cast upon the water, or damp soils, they are likely to remain there, often exposed to the germicidal influence of the sun's rays. We have, therefore, to consider what effect, if any, the dampness has on the resisting powers of the individual. The fact that the disease occurs among people living under all conditions of dampness or dryness of soil is evidence that neither of these conditions prevents the disease. The dryness of the soil and air of Denver, Col., has long been rightfully esteemed favorable for recovery from tuberculosis, yet from 1893 to 1897 there was an increase from 11.25% to 19.7% of deaths of natives to foreign population, and while we must admit the force of Dr. Bonney's statement, that "these figures are vitiated by an uncertain number of foreigners leaving just before death, who die at home," the fact remains, that the disease can be contracted in the dry climate of Denver.

"*Colds.*"—That "colds run through schools and families" has been a common experience for generations. The infectious nature of this disease is suggested where Boswell relates a conversation with Dr. Johnson, after his return from St. Kilder, more than a hundred years ago. "The inhabitants all complain," says Johnson, "that after the arrival of a ship at their port, all set to coughing and sneezing."

In New Brunswick, five years ago, during the month of August, in a hotel population of about 300 I saw 61 cases of this disease. An individual case came to the cottage of his mother. In three days his sister and mother were attacked. They visited a family in the hotel, in which three cases occurred. I was able to trace the disease to a third family with whom the second family was intimate. About the middle of the month, on the second and third days after a drive whilst party, there were fifteen new cases. Beyond this I could not trace the infection. The disease was mild, permitting most of the patients to be up and about with what they called a "head cold"; there were, however, a number of well developed cases of bronchitis.

Dampness of soil or air could not have been a factor in causing this epidemic. The month was unusually dry, as indicated by the absence of dew and the yellow grass in the fields, and without great variation of temperature.

Thus far I have only attempted to show that natural conditions of soil or climate are not necessarily factors in the causation of the diseases of respiration, and that there are other influences of great importance. Unfortunately, but few of our mortuary tables furnish details necessary to prove a higher or lower rate results from conditions of soil or air as regards moisture or tem-

perature. We have, however, a number of well-known facts relative to the subject.

Dr. William Ogle has shown that fishermen, who are, from the nature of their occupation, exposed to the greatest amount of moisture in the air and surroundings, have the lowest death-rate from respiratory diseases; and that occupations necessitating an indoor life the highest, where presumably they are more protected from dampness and the vicissitudes of the weather. The late Dr. Abbott of our State Board of Health, conclusively demonstrated tuberculosis to be essentially an indoor disease, and the outdoor treatment in our so-called "damp and cold" climate in winter, at Sharon and Rutland, presents results indicating a fair proportion of recoveries. The expression "damp and cold," however, has little, if any, significance when used without the thermometer and psychrometer, for in all temperatures below freezing, the air has the feeling of dryness, even though the measurement may indicate saturation, or 100% moisture.

Has the arid climate of desert regions with a mean relative humidity below 45% any influence on the diseases of respiration? They are not sufficiently inhabited or recorded for us to be able to answer. But this we do know, that under the influence of the arid atmosphere of our houses in winter, we have the most sickness and mortality from lung diseases. I have observed in winter the relative humidity in a hospital ward in Boston to go as low as 15%, which is 5% less than the lowest requirement for kiln drying lumber. Dr. Cowles, Mr. De C. Ward's and my own observations cover a period of time sufficient for the statement that we live in a mean relative humidity of about 30%, when artificial heat is employed. Fort Yuma, Ariz., has an annual mean of 35, and the inhabited parts of Sahara 40 to 50%.

We also know drying does not impair the vitality of the tubercle bacillus, but does render it more buoyant in the atmosphere. We know that all the diseases of respiration chiefly prevail in cold weather, attacking those of indoor life and occupation, where the air is excessively dry, and are not nearly as numerous in the summer when the air of our houses is relatively much damper than outside air. I have observed for the entire month of August 100 relative humidity in my office, and damp walls and the swelling of furnishings are well nigh universal in our houses during warm weather as a result of a high relative humidity and a lower temperature than that outside. On the other hand, in winter, when we have the greatest number of cases, the artificial heat employed lowers the relative humidity to such an extent no arid inhabited region in the world furnishes a parallel. Our furnishings shrink after being kiln dried, and windows and doors do not fill the spaces to which they are fitted. Yet none of the pathogenic organisms causing diseases of respiration appear to be injuriously affected, but rather appear to be more virulent. Possibly this may be due to their greater buoyancy when dried. Can this arid air contribute towards making humanity less resistant to these diseases?

When we remember the anatomical structure and the physiological action of the ciliary lining of the respiratory tract over which a thin watery fluid is constantly flowing upwards and outwards, in health, it would seem the respiration of air so deficient in moisture would, by evaporation, thicken, if not exhaust this fluid and thus impair the motions of the cilia and the flow of fluid, which evidently is designed to expel foreign matter, including pathogenic bacteria. The frequency with which these organisms are found in the upper air passages without causing sickness, suggests the probability of unfavorable soil, and inability to reach the deeper air passages under the circumstances. Colds may be contracted in warm weather but they usually end quickly, and only involve the upper air passages. In winter the disease, beginning with exactly the same symptoms, more often extends gradually down the trachea, and finally to the bronchi of the lungs, and we call it bronchitis.

The conclusions to be drawn from the evidence presented, is that all the diseases of respiration are common enough, regardless of dry, or damp soils, in hot or cold, moist or dry, climates, to at least raise a doubt if these conditions have any influence whatsoever as a cause of the diseases of respiration; but that an excessively dry air, which nature nowhere provides, but which we create in winter by raising the temperature of air holding a very small volume of watery vapor, and thus lower the relative humidity to an extent sufficient to impair the resisting powers of the mucous membrane lining the respiratory tract, may be a factor in the increased prevalence of respiratory diseases in cold weather.

A CONSIDERATION OF THE TREATMENT OF AUTO INTOXICATION OR AUTO INFECTION WHERE THEY ARE THE CAUSE OF MENTAL DISTURBANCE

BY J. SPENCER KINNEY, M.D.,

Physician to the Mental Department of the Boston Dispensary.

(Continued from No. 17, p. 490.)

C. SPENCER KINNEY, M.D., of the Eaton Sanitarium, Pa., in a letter to the writer, says: "The subject of auto-intoxication is of the greatest importance to me. For nearly fifteen years I have advocated colonic flushing, using it daily in my ward work to the advantage of my patients, have taught my students the importance of it, and have urged its use in society meetings." He also says in an article on "Melancholia," which he published in 1897: "In some cases antiseptic measures are resorted to as many cases of melancholia have auto-intoxication as a prominent feature."

Dr. John Lovett Morse, of Boston, in a recent paper on "Acid Auto-Intoxication in Infancy and Childhood," says that Czerny attributed the acid intoxication to the abnormal products of decomposition of feces and proteids. He divides the symptoms into two classes, nervous and gastric. The nervous symptoms are changes

of disposition, excitability, restlessness, irritability and insomnia. The gastric, anorexia, vomiting, thirst and constipation.

Dr. Charles E. Page, in the *Medical News*, Oct. 13, 1900, says he "found piperazine water a preventive of auto-toxemia caused by absorption of ptomaines from the gastro-intestinal tract, and he employed it to advantage in chronic dyspepsia and constipation with mental depression."

H. R. Stedman, M.D., of Brookline, in a paper on "Insanity," in the *Boston Medical and Surgical Journal*, of Nov. 24, 1904, which shows the result of exhaustive research, says that "Bruce considers that katatonia is an acute toxic disease with a definite onset and course."

In the *Journal of the American Medical Association*, of Oct. 28, 1905, William Howse, M.D., of the Mount Taber Nervous Sanitarium, Portland, Ore., publishes an interesting paper on "The Psychoses of Heart Disease," giving numerous cases. He contends in these psychoses that the heart disease is the exciting cause, and he says "a special insistence is placed on the relationship of mental improvement to therapy directed against the heart trouble."

Dr. Max E. Witte, superintendent of the State Hospital at Clarinda, Iowa, writes me that he has been convinced by the careful study of many cases of insanity coming under his care during a period of years, that the first beginning of many forms of insanity or acute affective disorders, such as melancholia and mania, often, if not altogether, have their primary inception not in the brain, but elsewhere, usually in the organs of the abdominal cavity. He says further, he is satisfied that researches in this direction will be rewarded by important discoveries in the future, and adds, "A routine examination of the cases coming in for many years have on the whole revealed a deterioration of the blood, more especially a diminution in the formed elements of the blood, particularly in the red corpuscles, also a corresponding lowering in the percentage of hemoglobin. These uniform findings certainly argue disordered and diminished metabolism, but, of course, I have not the exact data to determine definitely whether this diminution should be looked upon in the light of result or of cause, possibly both, since it seems to be a sign of a vicious circle."

As to auto-intoxication, it is a matter of every-day experience and observation that insane patients coming here, whether the disease has existed a long or a short time, are usually abnormally constipated, and one of the first indications in *trephena* is a marked tendency for the evacuation and regulation of the intestinal tract. So far as the constipation, then, from inquiry of the more intelligent patients, or from their friends, the condition has existed during the duration of the disease and often prior to it. Now and then it is met with even in mild and grave melancholia associated with a considerable duration of the disease, who are promptly relieved and recovered under the adminis-

tration of thyroid extract. We have no true cretinism so far in this part of the country."

Dr. George O. Welch, the medical superintendent of the State Hospital, Fergus Falls, Minn., says that the larger part of their cases suffer from auto-intoxication on admission to the hospital, and that "it certainly has a considerable effect in prolonging the unbalanced mental condition and making it more severe. That in most cases restoring the physiological functions to healthy action, especially paying particular attention to the digestive tract, so that the food is properly assimilated, produces a marked change for the better in the patient's mental condition."

Dr. J. Thomas Wright, of Winston, N. C., in an article read before the North Carolina Medical Society on May 23, 1905, on "Neurasthenia," says: "It is often the result of other diseases such as auto-intoxication, impaired metabolism, and in women, menstrual and other troubles. There is a starvation of the nerve cells due to deficient metabolism. There is an accumulation of waste products of the body, which, entering the circulation, cause an auto-intoxication and irritation of the cortex and through the nervous system an inhibition or perversion of the functions of the various organs. That uric acid accumulates and adds to the irritability. That there is an absorption of toxins from the intestinal canal caused by changes in the digestive juices by impaired digestion, fermentation and by bacteria, which is the chief cause in perpetuating the trouble." In addition to the usual treatment he gives high irrigation of the colon, mercurial purge, phosphate of sodium, lavage with stomach tube, nitrate of silver in $\frac{1}{2}$ -gr. pills, salicylate of soda, sulpho-carbolates and creosote.

Dr. W. A. Gordon, superintendent of the Northern Hospital for the Insane, of Wisconsin, writes me: "As to auto-intoxication, bilious, rheumatic, typhoid, syphilitic and fecal intoxications are about all that we recognize here so far as tabulation goes. The idea of elimination dominates our treatment. We eliminate by mercurial and saline cathartics, by the wet, hot and cold packs or sweat box, electrical and steam; by frequent bathing and copious ingestion of water. We have for a number of years used various intestinal antiseptics. Various conditions which are called acute mania are, I believe, caused by different intoxicating elements, and some melancholias are undoubtedly toxic. We seek to eliminate and at the same time improve the patient by liberal easily digested diet. It is in this field, I believe, the greatest advances will be made in our knowledge of the causes and in the treatment of the insanities."

Dr. Albert G. Stern, of Indianapolis, Ind., writes me that it is his custom to treat mental cases, notably of the acute variety, as persons physically sick, and that his best results have been obtained by elimination and rest.

D'Orsay Hecht, M.D., chief of the Neurological Clinic in the Northwestern Medical School, Chicago, in the *American Medical Journal* of

Nov. 4, 1905, gives an interesting case of "Acromegaly," in which the usual enlargement of the hands and feet took place, the changes in the skin, the eyes, the features, etc., were in keeping with the hypertrophy of the pituitary body. He also says, "She had severe headaches, nervous prostration and a series of hysterical attacks, one of which eventuated in a stupor that lasted several days. This was after a prolonged mental storm as the result of opposition." But what is of the most importance in relation to the subject of this paper is that there has been much drowsiness and no refreshing sleep for some time prior to the date of his reading the paper. Administering 3 gr. tablets of the pituitary extract rather intensified her headaches, which makes it an interesting case.

Dr. J. Montgomery Mosher, the first physician in this country to successfully establish a hospital of observation, which he did at Albany, N. Y., in an address to the Medical Society of the county of Albany, in October, 1904, says, "It is difficult to understand why work should be prescribed for exhaustion. And long journeys, amusements, changes of occupation causing an expenditure of nervous force, which is detrimental and not curative." He further says, "Auto-intoxication should be combatted and prevented by abundant activity of the intestinal tract and this excretion supplemented by the duties of the kidneys and the skin. Elimination of waste products is of prime importance."

Drs. Daniel R. Brower and Henry M. Bannister in their "Practical Manual of Insanity," speak of strychnine as particularly indicated in certain forms of depressed toxic insanities. They say that sometimes there appears to be a sort of intestinal paralysis, and it is quite a while before the normal action of the bowels can be reinstated. That the mere unloading of the clogged and distended bowel has often at once a most happy effect to all appearances, and that it seems probable that we cannot altogether reject the agencies of a reflex action on the brain in these cases. Continuing, they say: "It is probable that the modern notions of auto-intoxication have their application here, and that the conditions may be largely influenced by the toxic products with a sort of continuous absorption that is at once relieved by the evacuation and thorough cleansing of the lower bowel. As a practical fact, this matter of attention to the condition of the bowels is one of the most important of all in the treatment of insanity. It is a point that has been to some extent neglected or not sufficiently emphasized by some writers. We have seen patients apparently regular in going to stool who were nevertheless suffering from fecal accumulation, and occasional colon flushing with a normal saline solution, if the discharge is at all insufficient, or if the patient's general symptoms suggest any intestinal indication of reflex irritation from this source, is often followed by marked general improvement for the time. The use of gastric and intestinal antiseptics, especially the latter, may be indicated in

some of these cases with pronounced derangement in the entire intestinal tract."

On page 178, they say: "The principal facts to be borne in mind in the treatment of confusional insanity, are that we have to do with a condition of brain exhaustion and malnutrition; that also besides this, there is in mania, if not in all cases, an element of auto-intoxication to be always taken into account. The treatment usually is first to restore nutrition, to secure rest and to eliminate whatever toxic features there may be that are actively or otherwise assisting in perpetuating the disordered conditions in the brain. These patients should be treated as veritably sick individuals and the methods and nursing applicable as such to be applied. It is a good plan to commence treatment with a thorough cleaning out of the lower bowel by enema and a prolonged warm bath at a temperature of 93° to 95° F. for half an hour or more."

On page 282, they say: "The development of hysteric insanity is sometimes due to anemia or an auto-intoxication or both, and the early recognition of these pathological conditions and their correction may result in recovery. The treatment for this trouble should be mildly alterative and tonic; laxatives, massage, electricity and from time to time colonic flushings."

Again on page 329 in the treatment of mania they say: "One of the first essentials is to attend to the condition of the bowels which in the majority of cases are constipated, to do away with an auto-intoxication that may exist, and also we believe to put an end to the possible reflex irritation that is mechanically set up by the overloaded colon. They advise a prolonged warm bath of twenty minutes or over, followed by a thorough irrigation of the lower bowel. Then to give a full meal of milk and eggs or a meat broth and put the patient to bed. The patient will often go at once to sleep and get a good night's rest."

In a paper written by Dr. Bruce and Dr. Peebles of the Muthly Asylum, Perth, Scotland on "Katatonia," in October, 1903, they say: "Our conclusions are, that katatonia is an acute toxic disease with a definite onset and course, in which the symptoms vary according to the resistive power of the patient, but in which the following diagnostic symptoms are never absent. A prodromal period of gradual onset which lead into a period of acute onset, with aerial hallucinations, mental confusion, paroxysms of excitement, impulsive actions, katatonic spasms of the muscles, a hyperreflexia, which at the termination of the acute stage indicates a violent toxemia. In the second stage, a condition of stupor with muscular resistiveness to passive movements."

Livingstone says that W. Handlenger of Leipsic, who in 1848 published a work on "The Extraordinary Powers of Ergot in Nervous Diseases," states: "In many cases of headaches, especially the congested variety, I have at times a great deal of success, often combining it with bromide."

Charrin and LePlay in an article in the *Semaine Médicale*, Paris, November, 1901, say: "The experiments reported in this article demonstrate that the alimentary canal nominally contains innumerable poisons including toxic substances such as the distasteful, which are required for the nutritive processes." They have further established that frequently a disease is due to the disorganization of its defenses rather than to the intrusion of any special pathological agent. "In therapeutics, while it is necessary to attack the enemy, yet in many cases it is important that more attention should be paid to strengthening the ramparts. The normal organic products may become morbid under certain circumstances."

Prof. Carl von Noorden, in his little book on "Auto-Intoxication," says: "Within recent years the idea has become firmly established in the minds of physicians that a variety of morbid phenomena are due to auto-intoxication, and are, in other words, attributable to certain poisonous metabolic products. At first we Germans were by no means inclined to accept the theory of auto-intoxication, which was being so extremely proclaimed. Of late years, however, our attitude has become more friendly to the doctrine. This change of front is due to the fact that a number of toxic products of metabolism have actually been isolated and their mode of origin in the organism and their pathological effect determined, to the satisfaction of the former critics of the doctrine. We do not, of course, know all that we should properly know about the poisonous metabolic products that we incriminate in so many morbid states, but in a large group of important symptom complexes we are fortunately in possession of a number of facts that suffice to ground the doctrine of auto-intoxication on a solid chemical basis."

L. Meyer of Königsberg in the *Arch. F. Psych. u. Nervenk.*, Bd. 39, H. 1, reports eight cases of psychoses which developed apparently on a basis of auto-intoxication. The mental symptoms are insufficient to make a diagnosis without the presence of bodily symptoms, among which were headache, dizziness, fainting and tremor. Meyer calls attention to the difficulty in studying metabolism and the uncertain value of indican estimations. He concludes: "That the mental condition is so similar to that seen in other toxic and exhausted conditions that we cannot talk of a specific auto-intoxication and psychoses." "It is the physical condition," he says, "which enables us to diagnose the cause and justify the name."

Dr. F. W. Webster of Göttingen, in an article on "The Relation of Physical Diseases and Mental Disorders," includes intoxications and acute infectious diseases in his classification, and says: "The assumption of an auto-intoxication as the basis of physical disorder shall be more than a probable hypothesis in many cases, it must be required that the origin of the questionable poison be shown in a certain organ of the body, and again, the poison be demonstrated somewhere in the organism, either at its present

point of action in the brain, in the blood, or among the excretory products. The first condition is fulfilled in a certain measure in the psychoses, which occur in consequence of severe organic diseases (kidney, liver, thyroid glands, chronic gastro-intestinal diseases), while we are still unclear as to the sort of poison thus arising. How far the assumption of an auto-intoxication psychosis is justified will be shown in the discussion of the several organic diseases." Kraepelin states that "In the mental disorder named by him dementia precox, in which a connection with auto-intoxication is not excluded, heredity taint is found in 70% of all the cases."

Maurice Craig, M.D., of Bethlem Hospital, London, says, that "in katatonia most of the bodily functions are disorganized. The bowels are constipated not uncommonly to an extreme extent. Tongue furred, mucous membranes of the mouth unhealthy." Of dementia precox he considers it improbable that the disease is produced by auto-intoxication, but acknowledges that at present nothing is actually known as to its pathological basis. His advice as to treatment, is "early diagnosis, removal from home, correcting bad habits and a very regular life."

Of the treatment of the insane in general, he says, "There is no doubt that many of the insane are effected by the continual absorption into the blood of poisonous substances which are generated by putrefaction and fermentative changes taking place in the intestines." He does not, however, apparently agree that there is much advantage to be gained by the administration of intestinal disinfectants, but regards it as more useful to have the stomach washed out daily with warm water before breakfast.

I picked up in London a book of one hundred and seventy pages on the "Virtues of Tar Water," published in 1744 by the Right Rev. Dr. George Berkeley. The tar water was to be taken internally and was made by adding a quart of water to a quart of tar, stirring them together and letting the tar sink to the bottom. It is prescribed in ulceration of the bowels, in asthma, smallpox, and other diseases with apparent success. On page 47 he says, "For hysterical and hypochondriacal disorders so frequent among us, I have found that it raiseth the spirits and is an excellent antihysterie."

Regis says that in the variety of Brightie insanity which is due to the intoxication, we ought not to advise asylum treatment, unless very guardedly. The insanity, not of a dangerous type, following the course of albuminuria, may improve as it improves, and sometimes disappear, in case there are no profound cerebral lesions.

Again he says: "Simple constipation, angina and gastric uneasiness are enough at times to cause depression, sadness, melancholia with refusal of food, hallucinations of taste, delusions and insanity. Diseases of the intestines have also a very powerful action on the development of mental alienation."

Esquirol, it is well known, affirmed that

melancholia was due to a displacement of the transverse colon. Wiehmann, Hasselbach and Greting have also made the same observation. Bayle has also shown in his theses that enteritis and gastro-enteritis may produce sympathetically cerebral disorders. Dr. Holahof has shown that duodenal catarrh, especially after it has passed into the chronic condition, gives rise to a marked state of depression in the subjects; but in individuals already predisposed to neuroses, it may become the source of more serious mental disorder. In nearly every case the symptoms are those of hypochondria; at other times it develops into a regular melancholia with ideas of persecution, of unworthiness, with morbid exaggeration of conscientiousness, etc., or else the patients become unquiet, fretful, quarrelsome and excessively irritable. Alterations of the peritoneum and its folds, the mesentery and the epiploons, may also give rise to mental troubles. It is not uncommon to see dyspepsia bring on mental alienation, and it is especially in these cases that the chronic gastric disorders improve with the appearance of the insanity, to reappear when it, in its turn, has passed away. It should be added, for the sake of completeness, that the dyspeptic troubles, whether they are the actual cause of the insanity, or occur in persons already insane, usually give rise to two mental symptoms that are almost characteristic. These symptoms are: (1) Refusal of food, so intimately connected with dyspepsia which is not a mere sitophobia not connected in any degree whatever with gastric disorders. The second symptom consists in the almost constant existence in these disorders of the sensibility which have been called internal hallucinations and illusions, and which lead the patients to believe that their stomach and abdomen are the seat of extraordinary diseases, that they have been poisoned, that their food smells of phosphorus and arsenic, that they have living animals in their abdomen, that they smell badly, that they are rotten, etc. The usual result of this mental condition is a suicidal tendency, which is, in fact, quite marked in insanity of gastric origin.

The prognosis of the mental disease in all these cases is entirely dependent on the nature and the severity of the organic disease that gave rise to it.

Burrows and Hammond assigned to hepatic disorders one of the first places in the development of mental alienation.

Among the affections of the liver that appear to really influence the mental condition, hypertrophy and especially abscess are found in the first rank.

Clouston, in his last edition, says that the use of thyroid extract, of which he gives 60 gr. a day to produce a short five or six days' fever, is recommended by Dr. Lewis Bruce as a most powerful therapeutic means in most cases. No case should be allowed to become incurable without a trial of this method. It works marvels in some cases threatened with dementia, and even in some cases that have seemed to pass

Medical Progress.

REPORT ON THE PROGRESS OF SURGERY.

BY HERBERT L. BURRELL, M.D., BOSTON, AND H. W. CUSHING, M.D., BOSTON.

ETHYL CHLORIDE AS A GENERAL ANESTHETIC.

McCARBIE¹ believes that it is indicated for short operations needing longer and deeper anesthesia than nitrous oxide or nitrous oxide mixed with oxygen will give. He believes that it is particularly valuable as a preliminary to the administration of ether. It is contra-indicated in cases where there is inflammation or narrowing in the upper air passages. He considers that it occupies a ground midway in usefulness between nitrous oxide and ether. He considers that the drug would be very useful in military surgery, owing to its small bulk and the fact that it acts very rapidly. It certainly is far less depressing in its action than chloroform.

LUMBAR ANESTHESIA WITH STOVAINE.

O. Tilmann² has used stovaine in forty-two cases. As yet few mishaps have been reported in using stovaine. Chaput has reported a death and also a case of transient collapse after stovaine anesthesia.

PRESENT STATUS OF SPINAL ANESTHESIA.

A. Bier,³ although recognizing that the technic of spinal anesthesia is far from perfect, believes that spinal anesthesia in many instances is less dangerous than general anesthesia. He believes that it is particularly indicated in elderly or debilitated patients. Spinal anesthesia failed in only 4% of his last 300 cases; excluding those where the technic was at fault there was only 2.33% of failure. He adds a suprarenal preparation to the cocaine or stovaine as an important adjunct. In the 305 instances of spinal anesthesia he has not had a serious result.

IMPORTANCE OF SPINAL ANALGESIA FOR DIAGNOSIS AND TREATMENT OF AFFECTIONS OF THE ANUS AND RECTUM.

Neugebauer⁴ states that in 79 instances where he used this method of anesthesia in rectal cases, there was paresis or paralysis of the sphincters, which enabled him to visually investigate the rectum. He states that spinal analgesia in rectal cases is of great value.

NEW METHOD OF STERILIZING THE SURGEON'S KNIVES.

Grosse⁵ places the knives resting in a wire frame in a test tube. The tube is then corked tightly. The tube and its contents are then sterilized for ten minutes in steam, at a temperature of from 98° to 100° C. The knives come out dry, sharp and unspooled.

¹ The Lancet, Oct. 7, 1905, p. 1023.

² Berliner klin. Wochenschrift, xlii, No. 31, Aug. 21, 1905.

³ Archiv. f. klinische Chirurgie, lxxvii, No. 1.

⁴ Cent. f. Chir., xxii, No. 44.

⁵ Archiv. f. klinische Chirurgie, lxxvii, No. 1.

CARBOLIC ACID AND CAMPHOR IN THE TREATMENT OF INFECTED WOUNDS.

Chlumsky⁶ has used in wounds that are infected a solution of carbolic acid, 30 parts, camphor, 60 parts, and alcohol to make 100. This is used in all types of infected wounds. He evacuates the pus and pours the mixture into the wound. The mixture can be kept if the evaporation of the camphor is prevented.

THE PATHOLOGY AND PREVENTION OF SECONDARY PAROTITIS.

There are many theories as to the cause of secondary parotitis, and the operations that are most frequently followed by parotitis are those on the abdomen and particularly on the pelvic organs. An exhaustive summary of this subject is given by Bucknall⁷ and an analysis of the different theories. He summarizes the subject as follows:

"From a study of these facts it seems highly probable that secondary parotitis is invariably due to an infection of Stenson's duct, dependent on a septic condition of the mouth, and that its onset may be prevented by attention to the following details: (1) The patient's mouth should be carefully cleansed and rendered aseptic before operations and at the commencement of long febrile illness. If necessary causes of nasal obstruction leading to mouth breathing, such as adenoids, should be removed. (2) The anesthetic apparatus should be sterile. (3) The mouth should be periodically cleansed afterwards, especially after every attack of vomiting. (4) The bowels should be opened early and food by the mouth, and especially solid food, should be given as soon as possible. (5) Opium should not be given unless absolutely necessary. (6) The head should not be placed too low nor the binder fixed too tightly and the dorsal decubitus should be given up as soon as possible."

The treatment he recommended is the following: "Should parotitis threaten to appear, every effort should be made to cleanse the mouth and to prevent continued re-infection of the duct, as it is probable that resolution of the inflammation is then far more likely to occur. The administration of a sialogogue and an aperient should also be entertained. If the disease progresses it is most important not to wait for fluctuation before incising the region of the swelling, for in the most dangerous cases in which the pus is most likely to burrow and to lead to serious trouble it lies so deeply beneath the tense parotid fascia that fluctuation may not appear until it is too late. If the symptoms progress, therefore, for four days and the swelling increases and becomes edematous an incision should be made, as also in cases in which the temperature becomes high and intermittent, whether fluctuation can be detected or not. A transverse incision should be made over the point of greatest prominence, having due regard to the situation of the branches

⁶ Cent. für Chir., xxvii, No. 33.

⁷ The Lancet, Oct. 31, 1905, p. 1158.

of the facial nerve and Stenson's duct; the parotid fascia should be freely incised and not opened by Hilton's method as usually recommended. The finger should be introduced into the abscess cavity as in an abscess of the breast in order to break down the interlobular septa and to convert the various loculi of the abscess into one large cavity, which should then be drained. Otherwise undrained loculi will continue to grow and to burrow and a further operation may be called for, or burrowing may occur and lead to a fistula or other troubles."

RESUSCITATION BY DIRECT MASSAGE OF THE HEART.

Sencert¹ has reported an instance where, while operating to remove obstruction in the biliary passages, respiration stopped abruptly while the patient was under chloroform. Attempts at resuscitation, continued over seven minutes, failed to relieve. Sencert then introduced his hand through the laparotomy wound and, notwithstanding the interposition of the diaphragm, succeeded in stroking the heart rhythmically with his thumb in front and his fingers behind. In about five minutes the heart was felt to grow hard and large and in a few moments a contraction of the heart occurred. This continued to increase in strength and the patient finally recovered completely.

A REVIEW OF FIVE HUNDRED CASES OF GASTRO-ENTEROSTOMY, INCLUDING PYLOROPLASTY, GASTRODUODENOSTOMY AND GASTROJEJUNOSTOMY.

Dr. William J. Mayo.² It is a great satisfaction to find the review of Dr. Mayo's work on gastro-enterostomy. After all, the end results of these cases are what we need at the present time to establish their value. This article does not give end results, but it is a valuable one in that it gives the indications and technical values of the different operations. Dr. Mayo recapitulates as follows:

(1) The gastric opening should be placed on the posterior wall, obliquely from above downward, and left to right.

(2) The lowest point of the gastrojejunostomy should be at the lowest point of the stomach, on a plane perpendicular with the cardiac orifice.

(3) To insure this effect, the gastric incision should extend one fourth to one half of an inch on to the anterior wall.

(4) The incision in the intestine should be longitudinal, opposite the mesentery, and begin from one to three inches from the origin of the jejunum, measuring on the anterior surface (Peterson's point of election). The exact distance depends on the ease of attachment as shown as can be conveniently done without tension.

A description of the operation is, briefly, as follows:

(a) The abdominal incision is made 4 in. in length, $\frac{1}{2}$ in. to the right of the middle line, the fibres of the rectus muscle being separated. The

lower end of the external wound lies opposite the umbilicus. This opening also enables inspection of the duodenum and gall bladder and is reliable against hernia when closed.

(b) The transverse colon is pulled out and the mesocolon made taut by traction upward and to the right, in this manner bringing the jejunum into view at its origin.

(c) About 3 to 4 in. of the jejunum opposite the mesentery are drawn into a slightly curved clamp. The handles of the clamps should be to the right, to enable a short grasp on the intestine. Three fourths of the circumference of the bowel is pulled through; the posterior border is not included, to prevent entanglement of the suture with the redundant posterior mucous membrane. The holding clamps are applied sufficiently tight to check hemorrhage and prevent extravasation of intestinal contents.

(d) The ligament of Treitz is a short muscular mesentery covered by a variable peritoneal fold (too variable for a reliable landmark) extending upward from the origin of the jejunum on to the mesocolon. This peritoneal fold lies at the base of the arterial loop of the middle colic artery which supplies the transverse colon. The mesocolon is opened within the vascular loop and the posterior inferior border of the stomach pushed through. A small separation of the greater omental attachment to the stomach enables the anterior gastric wall to be drawn out posteriorly. The posterior gastric wall is drawn into a clamp, with the handles to the right, in such a manner as to just expose the anterior wall at the base.

(e) The two clamps are laid side by side and the field carefully protected by moist gauze pads. With fine, celluloidal linen thread, on a straight needle, the intestine is sutured to the stomach from left to right by a Cushing suture at least 24 in.

(f) The stomach and intestine are incised $\frac{1}{2}$ in. in front of the suture line and the redundant mucous membrane excised flush with the retracted peritoneal and muscular coats. With a No. 4 chrome catgut on a straight needle, the posterior cut margins of the entire thickness of the gastric and jejunal wall are united by a button-hole suture from right to left; at the extreme left the suture changes to one which passes through all the coats of each side alternately, from the peritoneal to the mucous, then directly back on the same side from the mucous to the peritoneum. This acts as a hemostatic suture, and also turns the peritoneal coats into apposition. It passes around the anterior surface and is tied to the original end, which has been left long to this purpose. If silk or linen is used for this suture it may bring on the suppuration for months.

(g) The clamps are now removed and the linen thread cut and secured until it is tied to the original cut freely, carrying the blood vessels in sight along the suture line. The parts are carefully cleaned and inspected. If necessary, a suture or two is applied, to accurately clamp or to check the oozing.

¹ *Bour. de Med. de Paris*, Sept. 24, 1903.

² *Annals of Surgery*, November 1903, 347.

(h) The margins of the incised mesocolon are now united to the suture line by three or four interrupted sutures, and the parts returned into the abdomen.

After Treatment.—On being placed in bed, a glass female douche point is passed just above the internal sphincter ani, attached to a gravity bag filled with one half strength normal salt solution. The elevation should not be greater than 6 in. The small stream passing into the rectum is readily absorbed without irritation. One or two quarts are taken up in an hour. (Murphy.) The patient is then placed in the semi-sitting posture.

Beginning at sixteen to twenty hours, an ounce of hot water is given every hour; this is rapidly increased, and in thirty-six hours the usual experimentation with liquid feeding is instituted. Rectal feeding is unnecessary. The operation is, in all of its essential parts, that of Mr. Moynihan.

(To be continued.)

Reports of Societies.

WESTERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

PROCEEDINGS OF THE FIFTEENTH ANNUAL MEETING
HELD IN KANSAS CITY, MO., DEC. 28, AND
29, 1905.

(Concluded from No. 17, p. 474.)

TWENTIETH CENTURY SURGICAL PROBLEMS.

DR. H. D. NILES, Salt Lake City, Utah, president, selected for his address this subject. No one who has kept in touch with recent experiences in the surgery of the brain, lungs, pancreas, spleen, peritoneum and other organs can escape the conviction that with a clear definite idea of the physiology of these parts the result of surgical endeavors will be infinitely more satisfactory than we are able to obtain with present knowledge. In brain surgery many failures cannot be charged to any lack of operative skill, but to inability to locate accurately the exact pathology early enough to insure its safe removal or correction. The same may be said of the morbid conditions of the spleen, pancreas and, in a degree, of the stomach. Until we are better informed by the physiologist of the normal functions of these organs, we cannot hope always to differentiate between the normal and the abnormal. The evidence that points to the one and excludes the other can only come to us through concentrated specialized efforts which the average surgeon is technically unfitted to undertake.

The line that divides surgical diseases from non-surgical is still somewhat vague and indistinct, and one of the most common sources of error in the treatment arises from the fact that we are often in doubt as to when and how far we may safely trust to the reparative resources of nature, and under what conditions prompt operative interference should be resorted to.

Thus far success in surgery has been measured largely by the ability to cope with advanced disease after it has become an immediate menace to life and health. But the time cannot be far distant when the

importance of recognizing the antecedent pathology of cancer, ulcer, surgical kidney, pus tubes, prostatitis, and many other grave lesions, will be impressed upon the profession, and the public will be educated to choose preventive rather than last resort surgery. If we are ever to solve the problems that baffle our endeavors to-day, and place surgery upon a much higher plane than it now occupies, he thinks scientific workers must become more practical; practical workers must become more scientific, and physicians and surgeons must become more nearly united in their ideas of pathology and treatment. And this can only be accomplished by an organized movement tending to bring all workers in closer touch and sympathy with one another.

CHYLOUS CYSTS OF THE MESENTERY.

DR. MILES F. PORTER, Fort Wayne, Ind., said that a study of the literature together with the reports of twenty cases, including one of his own, forms the basis of his paper. The literature is very meagre; the best of it is to be found in current publications. The history is bound with that of mesenteric cysts in general. Cysts of the mesentery were first classified by Portal, in 1803. Killian reported the first chylous cyst treated surgically; but Bramann's was the first one operated. Carson is probably the first in America to report a case of chylous cyst treated surgically. These cysts are very rare, more so than are serous cysts. The origin of chylous cysts must be regarded as manifold. They may be single or multiple, unilocular or multilocular, and multiple cysts may become multilocular single cysts and later unilocular by pressure absorption. There is nothing distinctive in chylous cysts save their contents and location. An exact diagnosis is neither possible nor necessary. A centrally located movable tumor crossed by bowel will be almost diagnostic of mesenteric cyst. Puncture for diagnostic purposes is condemned. Belly pain is a common symptom, and recurrent attacks of pain accompanied by vomiting and other symptoms of bowel obstruction are very significant. Chronic increasing constipation is a frequent symptom. A history of trauma is common. The treatment is surgical and the technique depends on the finding in each case. The fear of permanent chylous fistula in cases treated by drainage is unfounded.

TREATMENT OF GENERAL PERITONITIS.

DR. DONALD MACRAE, Jr., Council Bluffs, Ia., read a paper on this subject in which he advocated the Fowler position in all suspected peritoneal infections; also the institution of free drainage at the time of the operation by means of large sized rubber tubing only. Drainage of the most dependent part of the pelvis peritoneal pocket is imperative. He urges the removal of the primary pathological factors when possible, and spoke against the use of gauze and flushing. He said the drainage tubes should be sucked at frequent intervals.

APPENDICITIS.

There was a symposium on this subject.

DR. I. B. PERKINS, Denver, read a paper in which he gave further reports from physicians who have suffered from this disease. He discussed the diagnosis of chronic appendicitis and the prodromic stage in acute cases. He expressed himself in favor of early operation in all cases. The interval cases should be operated. Fatalities are usually chargeable to delay. The management of delayed cases was discussed; also attitude of the profession and public toward operation.

TREATMENT OF APPENDICITIS.

DR. O. BEVERLY CAMPBELL, St. Joseph, Mo., followed with a paper in which he drew the following conclusions: (1) In incipient appendicitis, until the patient is placed in the hands of the surgeon, all food and drink should be withheld, and the patient nourished per rectum. (2) Every patient should be advised of the advantages of an early operation. (3) The removal of the appendix, or the closure of an opening in the cecum, should be made, in abscess cases, when it can be done without additional risk to the life of the patient. (4) The practice of merely draining in every abscess case should be condemned as non-surgical. (5) Operation during a progressive diffuse peritonitis is attended with a higher mortality than the method of procedure recommended by the writer. (6) If the internist will direct his efforts in the treatment of appendicitis toward the protection of the peritoneum until he can transfer his case to the surgeon the mortality in this disease will be greatly lessened. (7) The adoption of the more rational method of dealing with diffuse peritonitis will convert a large percentage of these cases into circumscribed peritonitis, when they can be rightly classed as large abscess cases, having the same mortality.

TREATMENT OF APPENDICITIS IN ITS VARIOUS STAGES AS IT COMES TO THE SURGEON.

DR. C. H. WALLACE, St. Joseph, Mo., in a paper on this subject, summarized by saying: (1) That appendicitis is always a surgical disease. (2) That every case should have and is entitled to operative measures within the first forty-eight hours. (3) The rapidly progressing stage is the stage of applicability of the Ochsner treatment, and by it offers the lowest mortality. (4) Cases coming to the surgeon with evidence of gradually subsiding symptoms should be deferred for a more favorable operative period. (5) That every interval or chronic case should be urged to the operating table. (6) That abscess cases should be given two safe rather than one hazardous operation. (7) That diffuse peritonitis should have all accumulated dependent cavities primarily and carefully incised and drained and not flushed, and secondarily the offending organ incised.

DR. VAN BUREN KNOTT, Sioux City, Ia., followed with a paper in which he set forth his ideas at length concerning the management of cases of appendicitis based upon one thousand operations.

EXTRA-UTERINE PREGNANCY.

DR. J. W. ANDREWS, of Mankato, Minn., reported having operated on a woman who was ten weeks pregnant; the sac ruptured, and the operation was delayed thirty-six hours. He reported the case in detail. The steps of the operation he performed were not very different from those of an ordinary laparotomy. He argued in favor of accuracy and rapidity in operating on these cases, and emphasized the necessity in many cases of thrusting the hand down through the pool of blood and securing the blood vessels before attempting to mop out or otherwise remove the blood and blood clots. He thought drainage, as a rule, should be employed after laparotomy for extra-uterine pregnancy.

POST-CLIMACTERIC HEMORRHOIDS, THEIR CAUSE AND TREATMENT.

DR. A. L. WRIGHT, Carroll, Ia., called attention to the frequency of occurrence of post-climacteric hemorrhage after the establishment of the menopause. He spoke of how often it is passed over slightly, with the thought that it is incident to the woman's age, until grave complications are at hand, or the true cause

carcinoma in most instances — is so far advanced as to place the patient beyond the pale of surgical interference. Dr. Wright called attention to the several changes that take place in the uterus at this time, and cause hemorrhage. The trend of his argument is to early recognize the pathological changes taking place in the uterus, and if in doubt remove the organ rather than take chances that will invariably result in death.

GUNSHOT INJURIES OF THE STOMACH.

DR. J. N. WARREN, Sioux City, Ia., gave the history and analysis of 141 cases of gunshot injury of the stomach. He spoke of the character and location of the lesion in uncomplicated cases in determining the prognosis. In operated cases the time elapsing from the time of injury and the operation shows that the earlier the operation is performed, the more favorable is the result. In complicated cases the number of lesions found and viscera injured add to the gravity of the case. He referred to the results in the cases that were not operated. He said the presence of food in the stomach with the discharge of the same into the abdominal cavity adds to the danger of general peritonitis, either with or without operation.

THE SYMPTOMS OF SPINAL DISEASE.

DR. S. C. BALDWIN, Salt Lake City, Utah, called attention particularly to the early symptoms of spinal disease, in order that suffering may be earlier relieved and deformity avoided. The general or more common symptoms, and then such symptoms as rigidity, gait, pain, paralysis, abscess, etc., were considered. The symptoms differ when different regions of the spine are involved. For instance, in the cervical region the first symptom noticed may be pain in the head, and, according to Whitman, cataplexy may be a symptom of cervical disease. Before there is any sign of deformity the patient may complain of difficulty in swallowing and even in breathing. In the cervical region there may be and often is the grunting respiration. Such general symptoms as weakness, loss of appetite, loss of weight, rigidity and general change of gait in walking are apparent in disease of all parts of the spine. The writer has seen a number of cases of Pott's disease developing in patients over forty years of age, and two cases which he recalls developed after fifty. Weakness may show itself in a general drooping of the trunk, in an unsteady and stumbling gait, and exhaustion requiring rest after the slightest exertion.

DRAINAGE OF THE MALE PELVIS.

DR. WILLIAM JENSON, Sioux City, pointed out the indications for drainage of the male pelvis, and spoke of the obstacles in the way of instituting such drainage as compared with the female pelvis. He described a method of instituting drainage of the male pelvis and reported the results he obtained in 19 cases. In all of these cases there existed a diffuse pelvic peritonitis, with accumulation of purulent fluid often elevating the distended bowel high into the abdomen, and in two cases as ending between the mesentery and descending colon and overflowing from the pelvis into the left sub-diaphragm, which was also opened and drained. In all but five cases there existed in the space to the outer side of the ascending colon, which in each instance was drained through the described space. In one case the distended pericolic bowels necessitated opening and the establishment of an artificial anus. Three of the cases thus treated had one, after an illness of nearly five months, died, while the time death in three or four cases was shortened by intestinal distention, while a number of abscesses followed in the abdominal wall. Death resulted from

exhaustion incident to the prolonged suppuration. In the second fatal case death took place ten days after the operation, due to toxemia.

GASTRIC DYSPEPSIAS AMENABLE TO SURGICAL TREATMENT.

DR. WILLIAM E. GROUND, Superior, Wis., said it is now recognized that many forms of digestive disturbance are dependent upon conditions entirely outside the stomach, and involve this organ either by direct extension of the pathological process, or indirectly by nerve influence. Among these may be mentioned inflammatory or irritative conditions in the biliary apparatus, pancreas, duodenum, or appendix, and adhesions of the stomach to the surrounding viscera. Within the stomach conditions remediable by surgical means are perforative and non-perforative gastric ulcer, chronic gastric ulcer, hemorrhage, pyloric obstruction, gastric dilatation with stasis, hyperchlorhydria, and cancer. The question of operative interference in some of these conditions is still in dispute, but the wisdom of referring cases of perforating gastric ulcer with or without adhesions, cicatricial stenosis of the pylorus, adhesions of the stomach to any of the surrounding structures and perhaps chronic gastric ulcer, to the surgeon is now pretty firmly settled.

Closely associated with ulcer is the sequence of cicatrization and contraction, and when this process involves the pylorus it leads to stenosis and obstruction, and later, if this is prolonged, gastric dilatation and atony will result. When the pylorus is obstructed by spasm due to the presence of the ulcer or to hyperchlorhydria, which almost always accompanies non-malignant ulcer, or to the cicatricial contraction following the healing of an ulcer, the pylorus is rendered incapable of readily transmitting its contents, the stomach becomes distended, and its muscular walls weakened, leading ultimately to permanent atonia gastrica. Stomach dilatation may be due to atony alone, but it is much more frequently due to mechanical obstruction at the pylorus. In this condition of gastric stasis, food may remain in the stomach a day or more, whereas it should empty itself within seven days at the most. In fairly advanced cases, when the obstruction has given rise to a compensatory hypertrophy of the stomach, the peristaltic movements may be seen and felt through the abdominal walls, usually accompanied by pain and vomiting. Later, when the stomach begins to dilate and assumes a more passive state, the patient complains of fullness and epigastric pains after meals. Fermentation takes place, causing eructations and heart-burn, and frequently vomiting. Vomiting is a most prominent symptom when gasterectasia and fermentation are well established. When this sequence of events is set up, there is but one remedy, and that is surgical intervention.

In view of the information of the curative effects of operation, they cannot be attributed alone to drainage of the stomach or to short circuiting of the food current, as is so often contended, for unless the pylorus is closed, food will pass through it. The explanation the writer has arrived at is to the effect that the cutting off of the circular fibers in the pyloric end of the stomach does away to a considerable extent with the muscular unrest accompanying gastric digestion, especially where ulceration is present. To the author's way of thinking, a gastro-enterostomy acts much the same as cutting the fibers of the sphincter and in anal fissure. In this latter condition the feces continue to pass over the ulcer, but the paralyzed sphincter prevents friction and it heals readily.

RESTORATION OF THE PERINEUM.

DR. HOWARD HILL, Kansas City, Mo., said that the perineum is divided into three layers: A superficial sphincter layer, a middle ligamentous layer, and a deep layer consisting of the levator ani muscle and its fascia. An ideal operation consists in restoring the different planes of tissue to their normal position. It matters little which incision is used to expose the structures mentioned, but he has used a transverse incision which consists in raising a flap of the posterior vaginal wall and has done the operation by using three layers of sutures. The first includes the levator ani and its fascia, reattaching that portion of the muscle which helps to form the perineal center in front of the rectum. Next he identifies and sutures the triangular ligament and attaches the sphincter ani to the perineal center. A single suture is used for the bulbo-cavernosus.

GLUTEAL CAVERNOUS ANGIOMA.

DR. J. E. SUMMERS, Jr., Omaha, Neb., reported a case and said that cavernous angiomata of voluntary muscles are comparatively rare, and in the case of this report the size of the growth is exceptional. It was excised while the circulation was controlled by direct digital pressure of the common iliac artery through an abdominal incision.

PRE-OPERATIVE THROMBI IN THE REGION OF THE FIELD OF OPERATION AS A CAUSE OF POST-OPERATIVE COMPLICATIONS AND DEATH.

DR. A. W. ABBOTT, Minneapolis, Minn., in a paper with this title said that thrombosis, especially of the veins, is often to be found, if looked for, in the vicinity of the field of operation. Thrombi may result from the pressure of a tumor, from cancer, or tuberculosis, etc., or may be the result of adjacent inflammation or traumatism. Usually no attention is paid to the condition. Thrombosis in the field of operation increases the danger.

Are there any practical methods for avoiding these dangers? The author believes many cases of fatal sepsis, pulmonary embolism, and particularly many cases of so-called ether pneumonia can be rightly ascribed to the infection of a clotted vein or its disturbance by rough handling, or both, that are otherwise inexplicable, so also pyemia, abscess of the liver, osteomyelitis, and other evidences of metastatic infection. Aural surgeons have formulated a definite operation for thrombi of the lateral and sigmoid sinuses, namely, ligation of the internal jugular vein and clearance and drainage of the sinus. This is an eminently successful operation, considering the desperate condition which calls for the interference, and, so far as the speaker knows, is the only established operation for thrombosis complicating operation. He thinks a similar course should be pursued in all operations complicated by thrombosis.

CONSERVATISM IN POST-OPERATIVE TREATMENT.

DR. S. C. BEEDE, David City, Neb., referred to the increasing tendency among surgeons to hasten their patients out of bed and hospital after grave operations. His attention was first directed to this matter when members of the laity began to mention frequently the shortness of time patients were detained by this or that surgeon. Nurses would speak with pride of the fact that their favorite operator would send a hernia or an appendix case home in two weeks. Then another one, not to be outdone, made it twelve days instead of fourteen. Another, to make a better showing than his competitor, shortened the period of disability to

ten days, only to be met by a more daring rival with an eight-day period for a clean abdominal section.

This, he says, is not the limit of extravagance in this strife to make it appear easy to be operated, but patients after extensive abdominal work have been carried out of bed and placed in a chair on the third day, and allowed to walk about the room on the fourth. It is creditable that the many weeks in bed once necessary can now be avoided by a more perfect technique, especially in the matters of more perfect control of hemorrhage, aseptic precautions, discarding irritating antiseptics, avoiding unnecessary traumatism and care in suturing and suture tension. These give the best possible opportunities for nature to do her reparative work, but nature will work only so fast, and he thinks there is a limit in time beyond which it is unsafe to urge her. His contention is that this limit has been overstepped, and that the perfect result which should be the aim in every case is thereby marred.

OFFICERS.

The following officers were elected for the ensuing year: President, Dr. Malcolm L. Harris, Chicago, Ill.; First Vice-President, Dr. A. L. Wright, Carroll, Ia.; Second Vice-President, Dr. C. Lester Hall, Kansas City, Mo.; Secretary-Treasurer, Dr. Arthur T. Mann, Minneapolis, Minn.

Salt Lake City, Utah, was selected as the place for holding the next annual meeting.

Recent Literature.

Military Hygiene. By ROBERT CALDWELL, F.R.C.S., D.P.H., Lieut.-Colonel R.A.M.C. Pp. xi, 416. New York: William Wood & Co., 1905.

This is a distinct departure from the usual line of works on military hygiene, and a welcome one. The author has "endeavored to give a short account of those principles of sanitation which most nearly affect the soldier in his every-day life, whether at home, abroad, or in the field." Following a preliminary chapter on "The work of the microbe" are chapters devoted to thorough discussions of typhoid fever, dysentery, malaria, plague, cholera, Malta fever and other scourges of military camps and expeditions, in which the author presents facts and opinions based upon personal experience and observation, with becoming modesty and freedom from dogmatic assertion in matters open to argument. Concerning some questions he is very frank in disclaiming personal knowledge, and this tends to add to one's respect for his opinions based on experience. The difficulties in conserving the health of troops, especially in handling epidemic diseases where outbreaks are inseparably connected with the habits and customs of native populations in the East, are very graphically set forth. The chapters on water, air, food, clothing, refuse disposal, climate, sick transport, etc., are in the main sufficiently full for practical purposes. The book is attractively illustrated, and as a piece of workmanship is a credit to both author and publisher. The price, however, suggests a very handsome gift to the library, and we hope a larger royalty than usual to the former.

THE BOSTON Medical and Surgical Journal.

THURSDAY, MAY 3, 1906.

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THE ETIOLOGY OF RELAPSING FEVER.

HARDLY a year passes in which renewed evidence is not forthcoming that at least the infectious diseases will soon be understood; and the hope is not too great that when their etiology is definitely established their eradication will follow. The interest of late seems to have turned particularly toward the spirochetæ as causative of disease. There is the strongest probability that the long awaited organism which is the cause of syphilis has been found in the *Spirocheta pallida*. There is a rather unusual unanimity of opinion on the part of those best qualified to judge that this organism has a direct causative relation with the disease. The consequences which may result from this discovery we cannot at present predict, but that they will be fruitful and a benefit to the human race cannot be questioned.

A research also of the great importance relates to the etiology of the so-called relapsing fever of East Africa. In the latter part of 1904 two English investigators, Dr. Dutton and Todd, announced their discovery of the pathogenic agent of the so-called tick fever, occurring in certain provinces of the Congo Free State. They were able to infect monkeys through the bites of ticks with the spirochetæ which they believe to be the etiological factor of the disease. They concluded therefore that tick fever was produced by a spirochete which was transmitted by the bite of a certain tick the larvae of which they were able to cultivate in a suitable medium. Although subsequent to the work of Dutton and Todd.

Important confirmation of their work of the past

ness of these observations has recently been obtained by Dr. Robert Koch who has published his results in the *Berliner klinische Wochenschrift* for Feb. 12. Previous to the publication of Koch's results skepticism had prevailed in Germany regarding the part played by the tick in the spread of the disease, hence the reinvestigation of the entire matter by Koch himself. He dissected a large number of ticks and by most careful microscopic examination found in some of his specimens spirochete closely resembling the parasites which had previously been found in relapsing fever as observed in Europe. Carrying his study further, he investigated particularly *Ornithodoros moubata*, suspected by Dutton and Todd of being the special variety connected with the disease. This tick is a blood parasite, having a special fondness for human blood, lives in dry soil during the daytime, comes out at night to feed, and frequents the huts of the natives. It is easily kept in captivity. The females deposit their eggs in the earth. The disease, which is now definitely shown to be related to the bite of these insects, is strikingly analogous to European relapsing fever, although differing in certain details, particularly in regard to duration. The number of parasites found in the blood is less in the African than in the European variety.

Regarding the morphology of the spirochete Schaudinn and Koch differ. The former regards the spirochete as a transitional form of a trypanosome, whereas Koch believes that they represent more permanent forms. In studying the life history of the organism in its host, the tick, Koch made the interesting observation that during the first and second days no changes either in appearance or number of the parasites which the tick had absorbed were found; later that coincidentally with their disappearance from the stomach they were found in increasing numbers in the ovaries where they rapidly multiplied. A study of the eggs then showed that spirochetæ could be demonstrated in great numbers in the older eggs. From the various researches made, it appears to be proved that this variety of tick is the intermediary host of the disease, hence the importance of determining the geographical distribution of the insects. It was found that they were widely spread over various caravan routes and elsewhere, and that many of them contained the spirochete. The disease was not always, however, coextensive with the parasites, hence Koch assumed an acquired immunity. In this connection we beg

to call attention to the important work represented by F. C. Wellman's communications published in this issue. Discoveries of moment in this line of research have followed each other rapidly during the past few years. Methods of study have been perfected, and the direction in which investigation may most profitably be prosecuted has been established. It is not to be questioned that further results may soon be expected in the elucidation of the fatal and widespread diseases of the tropics.

PRIORITY IN THE USE OF THE LARYNGOSCOPE.

HOWEVER unfortunate it may be, it is none the less inevitable that when a discovery has proved its usefulness dispute will arise as to priority. The doctrine of evolution and many other scientific discoveries have received this treatment, and it is, therefore, no matter of surprise that so useful an instrument as the laryngoscope should now be a subject of dispute as to its actual discoverer. It has been generally accepted, at least by English-speaking people, that Manuel Garcia was the first to make practical application of an instrument for the study of the larynx by reflected light. The *British Medical Journal* calls attention to a somewhat heated controversy which has been going on in Germany, throwing doubt upon Garcia's claims to priority, and giving the credit rather to Türek and secondarily to Czermak. Professor Kohler, a Berlin jurist, has taken up the cudgels against Garcia, maintaining that his observations were so incomplete that they cannot be regarded as an actual discovery. He thereupon grants to Türek the authorship of laryngoscopy and attributes to Czermak improved technique and application of the method to clinical study. Sir Felix Semon has entered the lists in support of Garcia's claim and, replying to Professor Kohler, he discusses at length the investigations which led up to the use of the laryngoscope and gives to Manuel Garcia the credit of being the actual inventor. He not only established a definite method but demonstrated its value; hence to him, according to Sir Felix, belongs the scientific discovery, although Türek was the first systematically to examine patients by the laryngoscopic method. To Czermak also is given the credit for doing much toward the establishment of clinical laryngoscopy.

Our contemporary concludes its comments on the subject as follows, and there is small

question that the sentiment here expressed will meet with the general approbation of those conversant with the development of the science of laryngology:

"Garcia's work was sound physiology, and as such was capable of a direct and simple application to medical practice. This application of his discoveries to clinical work was obviously the medical man's business, and not Garcia's, just as, to quote a parallel instance aptly suggested by Sir Felix Semon, it was the business of the surgeon, and not of Professor Roentgen, to employ the x-rays for purposes of clinical diagnosis. But the surgeon, attaching more importance to common-sense principles of elementary ethics than to forensic subtleties, acknowledges, as a matter of course, that the discoverer of diagnosis by the x-rays is Professor Roentgen; the question as to what particular surgeon happened to be the first to diagnose a fracture by their aid is so childishly trivial that it does not even enter his mind, and the laryngologist is as much indebted to Garcia as the surgeon is to the distinguished physicist. He fully appreciates the professional zeal and ingenuity of Türk and Czermak, but no amount of doctrinaire argumentation about a quite unnecessary 'Prioritätsfrage' will ever blind him to the fact that to Garcia belongs the credit of having founded the science of modern laryngoscopy."

MEDICAL NOTES.

UNIVERSITY OF JENA.—In August, 1908, the University of Jena will have been in existence three hundred and fifty years.

LECTURES ON HYDROTHERAPY.—Dr. Simon Baruch has been giving a course on hydrotherapy at the College of Physicians and Surgeons in New York. This marks a step in therapeutic advance.

PROFESSOR ASCHOFF THE SUCCESSOR TO PROFESSOR ZIEGLER.—The chair in pathology at Freiburg, vacated by the death of Professor Ziegler, after having been offered to Professor Schmorl, has been accepted by Professor Aschoff of Marburg.

APPOINTMENT OF DR. EDWARD A. SPITZKA.—It is announced that Dr. Edward A. Spitzka has received the appointment of professor of general anatomy at the Jefferson Medical College of Philadelphia. Dr. Spitzka has been associated with the medical department of Columbia University since his graduation, and has devoted himself largely to investigations relating to the anatomy of the nervous system.

A TEMPTING TRIP TO JAPAN AND CHINA.—The Great Northern Railroad Company offers tempting facilities and fares for a trip to Japan and China, leaving St. Paul the last of June and sailing from Seattle on a Great Northern steamer. Dr. Alexander J. Stone, of St. Paul, is endeavoring to organize a party of one hundred physicians with their families to take advantage of this favorable proposition.

THE ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH.—The ceremonies attending the opening of the laboratories of the Rockefeller Institute for Medical Research, at the corner of Avenue A and 66th Street, in New York, will take place on the afternoon of Friday, the 11th of May. The Board of Directors have issued invitations and announce that addresses will be made by President C. W. Eliot of Harvard University, by President N. M. Butler of Columbia University, by Dr. W. H. Welch of Johns Hopkins University, who is also the president of the Board of Directors, and by Dr. L. E. Holt, the secretary of the Board.

NEW YORK STATE JOURNAL OF MEDICINE: CENTENNIAL NUMBER.—The March number of the *New York State Journal of Medicine*, which is the journal of the medical society of the state of New York, is presented as a centennial number. The last meeting of the society, held at Albany the last days of January and the first of February, was a centennial meeting. The present issue contains, among other things, the first chapters of a history of the medical society of the state of New York by Dr. Thomas J. Welch. It also contains the centennial addresses which were delivered at Albany on the occasion of the one hundredth anniversary.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON.—For the week ending at noon, May 2, 1906, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 44, scarlatina 35, typhoid fever 5, measles 117, tuberculosis 46, smallpox 0.

The death-rate of the reported deaths for the week ending May 2, 1906, was 18.93.

BOSTON MORTALITY STATISTICS.—The total number of deaths reported to the Board of Health for the week ending Saturday, April 28, 1906, was 225 against 210 the corresponding week of last year, showing an increase of 15 deaths and making the death-rate for the week 19.72. Of this number 112 were males and 113 were females;

220 were white and 5 colored; 142 were born in the United States, 80 in foreign countries and 3 unknown; 45 were of American parentage, 149 of foreign parentage and 31 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 43 cases and 5 deaths; scarlatina, 47 cases, 1 death; typhoid fever, 5 cases and no deaths; measles, 95 cases and 2 deaths; tuberculosis, 48 cases and 30 deaths; smallpox, no cases and no deaths. The deaths from pneumonia were 37, whooping cough 3, heart disease 25, bronchitis 4, and marasmus 3. There were 6 deaths from violent causes. The number of children who died under one year was 41; the number under five years, 61. The number of persons who died over sixty years of age was 43. The deaths in public institutions were 61.

There were 2 cases and 1 death reported from cerebrospinal meningitis during the week.

BOSTON LYING-IN HOSPITAL. REGISTRY FOR NURSES. — The Trustees of the Boston Lying-in Hospital opened on May 1, 1906, a registry for nurses for obstetric cases where a list of nurses who have graduated from the hospital and have registered is kept.

A nurse may be applied for at any hour of the day or night. A list of nurses who can be engaged for any future date is also kept. A fee of two dollars is charged for each nurse furnished.

Further particulars may be had of Mrs. E. J. A. Higgins, the superintendent.

NEW YORK.

NEW BELLEVUE HOSPITAL. — Dr. M. S. Gregory, physician in charge of the psychopathic ward of Bellevue Hospital, has been sent to Europe by the trustees of the Bellevue and Allied Hospitals on a two months' tour of the principal English and continental hospitals, with a view to the adoption of such of their arrangements as may seem advisable in the construction of the new Bellevue Hospital.

AMERICAN SOCIETY OF SUPERINTENDENTS OF TRAINING SCHOOLS FOR NURSES. — The twelfth annual meeting of the American Society of Superintendents of Training Schools for Nurses was held at the New York Academy of Medicine on April 25, 26 and 27. At the first session an address of welcome was made by ex-Mayor Seth Low, and on April 27 Miss Mabel Boardman, of the executive committee of the American Red Cross Association, read a paper on "The Red Cross Nurse."

A LEGACY FOR THE CELEBRATION OF MASSES DECLARED VOID. — On April 20, the Appellate Division of the New York Supreme Court handed down a decision affirming a decision rendered by Justice McCall, in special term, to the effect that a legacy in the will of the late Joseph Hughes, amounting to three fourths of the estate, to the trustees of St. Francis Hospital for the celebration of masses for the dead, was void. In the opinion of the Appellate Division, affirming the decision of the lower court, it seemed clear that the object of this gift was not within any of the purposes of the hospital corporation.

RELIEF FUND FOR THE SAN FRANCISCO MEDICAL PROFESSION. — The Medical Club of Brooklyn, of which Dr. J. S. Waterman is President, met at the Hamilton Club on April 23 and appointed a committee to raise funds, to be transmitted through the Kings County Medical Society, for the relief of members of the profession in San Francisco. One hundred dollars was voted from the treasury of the club, and \$400 additional was contributed by the individual members present. In a letter received in New York since this meeting a leading San Francisco physician writes: "I lost all my manuscripts, and all my instruments and records went up in smoke. . . . What the doctors need here is operating chairs and surgical instruments of all kinds — immediately. This is very important, and I hope the matter will not be overlooked by the generous public."

Obituary.

JOHN COMBE PEGRAM, JR., M.D.

JOHN COMBE PEGRAM, Jr., of Providence, died at the Corey Hill Hospital on April 26, 1906. He had been successfully operated on for chronic appendicitis nine days before. Convalescence seemed fully established when, without apparent cause, the left parotid and submaxillary glands became the seat of a streptococcal infection which rapidly spread to the pharynx and larynx. Tracheotomy and drainage gave only temporary relief.

Dr. Pegram was thirty-six years old. In 1892 he graduated from Brown, and in 1896 from the Harvard Medical School. He was surgical house pupil at the Massachusetts General Hospital in 1895-96, where his work was such as to attract especial commendation, and where he made many warm friends. A year later he finished his course at the Children's Hospital. He was visiting surgeon to the Rhode Island Hospital; orthopedic surgeon to St. Joseph's Hospital; consulting surgeon to the Butler Insane Asylum and medical examiner for the state of

Rhode Island. His work, first in orthopedics and then in general surgery, was of the highest order. Already he had won an enviable position as a surgeon in Providence, where he was held in the greatest respect and affection. It is not too much to say that he had before him a career of exceptional brilliancy and usefulness.

Miscellany.

THE CLIMATE OF HAWAII.

THE following extract from a report written by Dr. Leland E. Cofer bears directly upon the climate of Hawaii, and is being circulated by the Hawaii Promotion Committee:

"The element of charm, which enters so potently into all things Hawaiian, makes even the climate conditions almost impossible of description.

"Indeed, one lives so comfortably here that the character of the climate is practically never thought of, in the same way that a sound man lives oblivious to his liver. A person newly arrived from the lands where snows and sun-strokes prevail could give a more convincing description of our days and nights than one who through sheer content has lost all sense of perspective.

"The weather statistics tell the truth but hardly the whole truth. They show, and with all accuracy, a rather high rainfall, yet the layman, either because our rains usually occur at night or else because he usually sees them as 'liquid sunshine,' would invariably pronounce the climate as the dry marine variety. The temperature, humidity and rainfall varies widely with the exposure and elevation selected as the point of observation. Therefore, so long as it is possible to run by automobile over good roads in a few hours, from the humid warmth of the coast to the dry cold of the highlands, so long will the opinions of men differ as to the climate taken as a whole.

"As Honolulu is the natural center and distributing point, one forms his impressions from local climate conditions. It may be said in general that the climate is of the semi-tropical variety in which the mean extremes are never reached.

"The fair days are no warmer, nor the rainy ones more disagreeable, than those prevailing during the month of June in New York City, and withal there is the certainty that these conditions will obtain throughout the whole year. While a great many men dress just as they do in the eastern states, the large majority of the population enjoy the privilege not to say the luxury of being comfortable in white every day in the year.

"Surf bathing and aquatic sports, pleasures which are known to comparatively so few people on the mainland, are indulged in, particularly by children, in January and July alike. In this

latitude and longitude such conditions, it is needless to say, are unique and would be impossible were it not for the trade winds which keep intact health, comfort and commerce and make out-of-door sports a part of the daily routine. As every one may live constantly in the open air, the pleasures of those in good health are shared by health-seekers. The medical 'don'ts' which are necessary in so many really good climates are unknown here. Therefore the convalescent in Hawaii has not the identity which is so often his, and which proves not infrequently a barrier to rapid recovery from ailment. Unlike some climates it is not good for every disease to which the human economy is liable. For example, persons suffering from pulmonary tuberculosis will usually thrive far better in Colorado than here. On the other hand patients suffering from nervous complaints, kidney disease, etc., are justified in coming here from almost any part of the world. In short, I believe the influences in Hawaii offer the least resistance to bodily well being of any of the well-known health resorts of the world. Even if the meteorological findings are similar in other places, it is doubtful whether they make their impress upon the people as they do here.

"This climate breeds happiness and laughter, a natural and appropriate reflection of the sunlight, rainbows and purple hills, and for those who enjoy such things—there's Hawaii."

THE STATISTICS OF THE MEDICAL STUDENTS IN GERMANY.

STATISTICS published by the *Frankfurter Zeitung* as to the number and distribution of medical students throughout the German universities show in a general way that the popularity of medical studies increased progressively from 1860 to 1890, since which year it has declined. During the winter session 1905-06 the total number of medical students in Germany was 6,080, last summer it was 6,032, during the previous year 6,153. In 1885 the total was 7,725, in 1890, 8,986 and in 1896, 7,551. These figures include foreign students, of which there are at present 895 registered in the universities. Last summer there were 751. German subjects registered as medical students numbered in 1861, 2,000; in 1872, 3,365, and in 1881, 4,389. The proportion per 100,000 inhabitants, shown by medical students of German nationality at the present date is 8.5; in 1890 it was 11; in 1881 it was 9.7; in 1872 it was 8.5 and in 1861 it was 7.6. The proportion of medical students in the different universities is shown as follows: Since 1882 the number of medical students at Berlin, Munich, Freiburg, Heidelberg, Bonn, Kiel, Göttingen and Rostock has increased 50% and at Leipzig over 25%. At Greifswald it has been cut 100% and at Breslau 50%. At Tübingen and Würzburg more than 25% and at Königsberg and Halle more than 20%. Münster, where no German university has no medical faculty. *Continued.*

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, APRIL 21, 1906.

| CITIES. | Reported deaths in each. | Deaths under five years. | CITIES. | Reported deaths in each. | Deaths under five years. |
|------------------------|--------------------------|--------------------------|-----------------------|--------------------------|--------------------------|
| New York | 1,579 | 515 | Quincy | 8 | — |
| Chicago | 645 | 174 | Waltham | 3 | — |
| Philadelphia | 568 | 139 | Glooucester | 2 | — |
| St. Louis | — | — | Pittsfield | 7 | — |
| Baltimore | 219 | 61 | Brookline | 3 | — |
| Cleveland | — | — | North Adams | 6 | 1 |
| Buffalo | — | — | Chicopee | 5 | 2 |
| Pittsburg | — | — | Northampton | 1 | — |
| Cincinnati | — | — | Westfield | 5 | 1 |
| Milwaukee | — | — | Beverly | 5 | 3 |
| Washington | — | — | Hyde Park | 3 | 1 |
| Providence | 93 | 28 | Newburyport | 3 | 0 |
| Boston | 246 | 70 | Leicester | 3 | 0 |
| Worcester | 48 | 16 | Medford | 4 | 0 |
| Fall River | 42 | 4 | Woburn | 4 | 1 |
| Cambridge | 28 | 5 | Marlborough | 3 | 0 |
| Lowell | 32 | 11 | Westford | 5 | — |
| Lynn | 19 | — | Peabody | — | — |
| New Bedford | 31 | 15 | Revere | 1 | 1 |
| Springfield | 27 | 2 | Clinton | 6 | 4 |
| Lawrence | 27 | 10 | Attleboro | 0 | — |
| Somerville | 19 | 5 | Adams | 4 | — |
| Holyoke | 19 | 9 | Gardner | 4 | 1 |
| Brookton | 8 | 3 | Milford | 9 | 4 |
| Malden | 1 | 6 | Weymouth | 8 | 0 |
| Salem | 21 | 6 | Framingham | — | — |
| Chelsea | 13 | 7 | Watertown | 1 | 1 |
| Haverhill | 14 | 2 | Plymouth | — | — |
| Sexton | 6 | 1 | Southbridge | 4 | — |
| Fitchburg | 18 | 8 | Wakefield | 4 | 0 |
| Taunton | 14 | 2 | Webster | — | — |
| Everett | 4 | — | | | |

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING APRIL 28, 1906.

E. J. H. OLD, assistant surgeon. Detached from the Naval Medical School, Washington, D.C., and ordered to the Naval Training Station, San Francisco, Cal.

F. J. B. CORDEIRO, surgeon. Discharged from treatment at the Naval Hospital, New York, N. Y., and ordered to Washington, D. C., May 2, for examination in conformity with title 15, chapter 3, Revised Statutes, and thence home to wait orders.

R. E. HOYER, passed assistant surgeon. Detached from the Naval Academy and ordered to the "Newark."

E. U. REED, assistant surgeon. Ordered to the "Charleston," May 1.

P. T. DESSEZ, assistant surgeon. Detached from the "Charleston," and ordered to the "Severn."

SOCIETY NOTICES.

ASSOCIATION OF AMERICAN PHYSICIANS.—The Association of American Physicians will hold its twenty-first annual meeting May 14 and 15 next at the Willard Hotel, Washington, D. C. On Wednesday evening at the Hotel Willard a joint session of the Association of American Physicians and of the Association for the Prevention of Tuberculosis will be held.

AMERICAN CLIMATOLOGICAL ASSOCIATION.—This association will hold its twenty-third annual meeting May 12-14, 1906, at the "Marlborough-Blenheim," Atlantic City. First day, Saturday, May 12: Scientific Session, 9:30 A.M. to 12 M. Business Session, 12 M. to 1 P.M. Scientific Session, 2:30 to 3 P.M. Annual Dinner, 7 P.M. Second day, Monday, May 14: Scientific Session, 9:30 A.M. to 12 M. Business Session, 12 M. to 1 P.M. Session, 2:30 to 5 P.M. Adjournment.

GUY HINSDALE, M.D., Secretary.

E. L. SHURLY, M.D., President. Hot Springs, Va.

NEW ENGLAND ASSOCIATION FOR THE EDUCATION OF NURSES.—There will be a meeting at Huntington Hall, Massachusetts Institute of Technology, Boylston Street, on Friday, May 11, 1906, at 4 and at 8 P.M. Paper for afternoon: "What proportion of a nurse's training should be spent in district nursing?" Miss Annette Fisher. Discussion. "The present curriculum from the point of view of the nurse." Dr. Hugh Cabot. Discussion.

8 P.M.: "Are the applications for admission to training schools diminishing in number?" Statistics read by Dr. G. Volcovich. Discussion. "The advantages of separate organization for training schools for nurses from that of the hos-

pital." Dr. Alfred Worcester. Discussion: Dr. G. H. M. Rowe, Dr. Edward Cowles, Dr. Herbert B. Howard, Mrs. W. W. Vaughn, Dr. F. W. Patch. A cordial invitation to be present is extended to those interested.

MISS EMMA A. ANDERSON, Secretary.

DR. RICHARD C. CABOT, President.

RECENT DEATHS.

JOHN COMBE PEGRAM, JR., M.D., M.M.S.S., of Providence, R. I., died April 26, 1906, aged thirty-five years.

CHARLES FRED MOULTON, M.D., M.M.S.S., died in West Roxbury, April 24, 1906, aged forty years.

BOOKS AND PAMPHLETS RECEIVED.

Sex and Character. By Otto Weininger. Authorized Translation from the Sixth German Edition. London: William Heinemann. New York: G. P. Putnam's Sons. 1906.

Recent Advances in Physiology and Biochemistry. Edited by Leonard Hill, M.B., F.R.S. Contributors: Benjamin Moore, M.A., D.Sc.; Leonard Hill, M.B., F.R.S.; J. J. R. Macleod, M.B.; M. S. Pembrey, M.A., M.D., and A. P. Bedard, M.A., M.D. With diagrams. New York: Longmans, Green & Co. London: Edward Arnold. 1906.

Case Teaching in Medicine. A Series of Graduated Exercises in the Differential Diagnosis, Prognosis and Treatment of Actual Cases of Disease. By Richard C. Cabot, A.B., M.D. (Harv.) Boston: D. C. Heath & Co. 1906.

Illustrations of Human Vivisection. Vivisection Reform Society. 1906.

A Treatise on Surgery. By George Ryerson Fowler, M.D. Illustrated. Vol. 1. Philadelphia and London: W. B. Saunders Co. 1906.

A Text-Book of Materia Medica, Therapeutics and Pharmacology. By George F. Butler, Ph.G., M.D. Fifth edition. Thoroughly revised and rewritten and adapted to the eighth revision (1905) of the U. S. Pharmacopoeia. By Smith Ely Jelliffe, M.D., Ph.D. Philadelphia and London: W. B. Saunders Co. 1906.

A Text-Book on the Practice of Gynecology. For Practitioners and Students. By William Easterly Ashton, M.D., LL.D. Second edition. Illustrated. Philadelphia and London: W. B. Saunders Co. 1906.

Diseases of the Eye. A Handbook of Ophthalmic Practice For Students and Practitioners. By G. E. de Schweinitz, A.M., M.D. Fifth edition. Thoroughly revised. Illustrated. Philadelphia and London: W. B. Saunders Co. 1906.

Reference Handbook of the Diseases of Children. For Students and Physicians. By Prof. Dr. Ferdinand Fruhwald. Edited with additions, by Thomas S. Westcott, M.D. Illustrated. Philadelphia and London: W. B. Saunders Co. 1906.

A Handbook of Climatic Treatment, including Balneology. By William K. Hugdard, M.A., M.D., F.R.C.P. Lond. London: Macmillan & Co., Ltd. New York: The Macmillan Co. 1906.

The Operating Room and the Patient. By Russell S. Fowler, M.D. Illustrated. Philadelphia and London: W. B. Saunders Co. 1906.

Nursing: Its Principles and Practice. For Hospital and Private Use. By Isabel Hampton Robb. Third edition, revised and enlarged. Illustrated. Cleveland: E. C. Koerkert. 1906.

Nursing in the Acute Infectious Fevers. By George P. Paul, M.D. Illustrated. Philadelphia and London: W. B. Saunders Co. 1906.

Saunders' Question-Compends, No. 13. Essentials of Genito-Urinary and Venereal Diseases. Arranged in the form of Questions and Answers. Prepared especially for Students of Medicine. By Starling S. Wilcox, M.D. Illustrated. Philadelphia and London: W. B. Saunders Co. 1906.

Gynecological Diagnosis. A Manual for Students and Practitioners. By Arthur E. Giles, M.D., B.Sc. Lond., F.R.C.S. Ed., M.R.C.P. Lond. Illustrated. New York: William Wood & Co. 1906.

The Treatment of Gonorrhea in the Male. By Charles Leedham-Green, M.B., F.R.C.S. Illustrated. New York: William Wood & Co. 1906.

Transactions of the Obstetrical Society of London. Vol. XLVII. For the year 1905. Part IV., for October, November and December.

Atmokausis und Zestokausis die Behandlung mit Hochgespanntem Wasserdruck in der Gynäkologie. Von Dr. Ludwig Pinus. Second edition. Illustrated. Wiesbaden: J. F. Bergmann. 1906.

The American Society of Tropical Medicine. Papers read before the Society and published under its auspices. Vol. I., 1904-1905.

Address.

1806-1906.

THE BOSTON MEDICAL ASSOCIATION.*

BY DAVID W. CHEEVER, M.D., BOSTON.

ONE hundred years ago this Association was founded in Boston, by a few physicians, practising in a semi-rural town. Gardens, orchards and common fields or pastures divided the scattered houses. If any streets were paved, they were with beach cobblestones. There were no street lights; there were no street cars; there was no steam; no electric usage; no telephone; no ether; probably no coal and no matches. The Doctor rode in town in a chaise, whose two wheels turned easily at sharp angles; out of town, he rode on horseback. There were no hospitals, and no abuse of charity. The almshouse was the clinic. Crude opium, or ipecacuanha supplied the place of modern alkaloids, vegetable leaves were infused and drank as senna and other teas; the followers of Galen who were herbalists disputed the field with those who used minerals; for the latter, antimony and calomel were the standard remedies. The lancet was often unsheathed and the emetic was an anti-febrile remedy. Books were few, knowledge traditional; observation, acute, and eyes, undulled by instruments of precision; deductions were slow and durable; judgment, careful; professional pride and status, higher than to-day. And yet from these scanty resources a few doctors founded a medical school, a hospital, a medical society, and an association. The school was the medical school of Harvard, the hospital was the Massachusetts General, the society was the Massachusetts Medical Society, and the association was the one whose centenary we celebrate to-day.

My grandfather, Dr. Majah Cheever, was practising in Hanover Street, at the North End. At this period, Dr. John Warren was lecturing on anatomy and surgery out in Cambridge, which he sometimes had to reach by ferry, when other means failed. Life was simple; medical knowledge was filtered from the great distance of England; very few men saw Laroque or Abernethy or Cooper, although some did later.

This was a community isolated by forests and by seas, with a currency shaken by an eight years' war, with few advantages and no neighbors. There was no rapid transit, New York was five days away. Men relied on themselves, *totus teres et rotundus* there developed the all-round practitioner, reserved in manner, clerical in dress. We shall see presently how well he did, and how worthy he was of our imitations.

Again how different was from 1670 to 1700, when my ancestor, Ezekiel Cheever, from whom I am of the seventh generation, the master of the Latin School, kept his classes in a little frame building on School Street, near King's Chapel.

Cotton Mather, Increase Mather, Sewall and other worthies then ruled the private life and

manners of all citizens. Decorum prevailed; Boston was a small town; its habits and social customs regulated by the reverend clergy.

A century after the death of the old teacher of the classics, and rising from the throes and poverty of the Revolution, a new order of things had come about.

In 1781, before the Revolutionary War was over, thirty-one doctors had founded the Massachusetts Medical Society. The statute of the Commonwealth thus defines it:

"As health is essentially necessary to the happiness of society, and as its preservation and recovery are closely connected with the animal economy, and with the properties and effects of medicine; and as the benefit of medical institutions, formed on liberal principles, and encouraged by the patronage of the law, is universally acknowledged; Be it therefore enacted that Nathaniel W. Appleton [and thirty others] are formed into a body corporate by the name of the *Massachusetts Medical Society*."

One hundred years ago, Boston had thirty thousand inhabitants. Its directory of the year 1806 registered thirty-nine doctors.

Twenty-six were fellows of the Massachusetts Medical Society, and thirty belonged to this Association.

Many familiar and family names of physicians occur among them: John Warren, John C. Warren, James Jackson, Lemuel Hayward, William Ingalls, John Jeffries, Benjamin Shurtleff, William Lusk, Samuel Danforth, James Lloyd, Isaac Rand, John Fleet and eighteen others, thirty in all.

Now Boston has six hundred thousand inhabitants, six hundred and nine physicians, and two hundred and fifty-two are members of this Association.

Samuel Danforth, James Lloyd, Isaac Rand and John Warren, who are among the founders of the Massachusetts Medical Society, are also quoted among the thirty who established this local medical association for the town of Boston.

In 1806 the war was over, the states had united, the currency had improved, Boston had considerable wealth, and the style of living had grown less narrow and more liberal. Republican license was displacing Puritanism.

It was to meet these conditions and to adjust the fees of the doctor, justly to them, that this Boston Medical Association was formed in 1806. What were the reasons for the need of a fee table? They are as well explained in the transaction of our Association, that I cannot do better than quote them.

"An agreement among physicians in regard to a fee table would not be prejudicial to the cause of humanity. Such agreement implies that a physician would not afford his aid unless he were compensated, and compensation is a moral duty. It will hardly be disputed that a man who has not full share of those of any other man, in his gratefulness serves to the society. Surely indeed would it be, while their duties are con-

* Remarks made at the Centenary Meeting of the Boston Medical Association, May 7, 1906.

stantly bringing before their minds the wisdom and goodness of God their creator, if they should not be disposed to extend their aid to the sick and suffering from any other motive than a reward to themselves. But men without fortune would not enter the profession of medicine, if they did not look to their labors, as men do in other professions, for an adequate maintenance, and, if successful, for the accumulation of some property. With us, almost every one who engages in medical studies is altogether dependent on his business for support. The fees are indispensable; so much so, that the young practitioner is liable to the temptation of undervaluing his services for the attainment of immediate support; and those who are no longer young may also offer their services at a low price, hoping to compensate themselves by an increased amount of business. This will be done by those who think more of the amount of business than of the services due to their patients.

"It is at this point that we may consider what is for the interest of the public,—what is for the interest of the sick, who look to the physician or surgeon for their cure. Which would be best, that the medical men should contend who would do the work for the lowest fees, or that they place their claims on their education, or their devotion to their profession, and on whatever goes to make up the qualifications for the proper management of the sick,—in short, on their professional skill and merit? It is true that professional skill and merit are not always duly recognized and rewarded; the battle is not always to the strong. But, in general, the strong will ultimately succeed in the contest; and it is better for the community that every medical man should rely on his qualifications to be truly useful, than that he should be compelled to contend with his neighbor and brother as to which would serve the sick at the lowest rate.

"From this view of the subject, we conclude that the establishment of a uniform fee-table among physicians and surgeons living in the same city or in a near vicinity is justifiable and proper.

"With regard to the principles on which a fee-table should be constructed, it may be assumed that the fees should be high enough both to induce men of talents and good character to enter the medical profession; and also to satisfy them, so that they should never cease to study their art, and to cultivate all branches of science which would aid them in it. The physician should be able to obtain a subsistence in the early years of his life by such a moderate share of business as can be obtained in those years; and, if successful and fully occupied after he has arrived at middle life, he should be able to live in a style consistent with his rank in society, and to make provision for his old age, or for such a family as he may leave behind him."

Mark the changes in our fee-table in a century; how gradual they have been; taking the charge for a visit as the unit: 1788, sixty-seven cents (four shillings); 1798, one dollar (new currency);

1808, one dollar and a half; 1851, two dollars; 1864, three dollars; 1905, three to five dollars. Since the Civil War, changed conditions have come in. The inflation of a paper currency, the demoralized habits engendered by four years of war, the great expansion of business since 1897; the high tariff; the growth of monopoly; exaggeration of expenses; high cost of labor,—have swelled the expenses of all out of proportion to income. A falling rate of interest, a sharper competition, a flood of immigration, have lowered the standard of the middle class, shrunk the resources of the employee; tended to divide society into two classes,—the very rich and the poorer class.

It may be asserted as more than probable that the doctor's "plant" is the most expensive of all callings. From eight to ten years, according to the most complete preparation, comprising college, medical school and hospital, will make the young physician from twenty-five to twenty-eight years old when he is ready for practice.

Many of these years, in other callings, are often working years, productive years.

It is safe to say that the expense of such a medical education, including support for from eight to ten years, is not less than \$6,000 or more than \$10,000.

Is it unreasonable to count the annual interest loss on this outlay at \$500. forever? Is it probable that the young doctor is self-supporting under three to five years more? One must be past thirty years of age to have acquired some medical practice. Now comes in the nature and resources of his *clientèle* and the wise course to pursue in charging.

What can the doctor do to adjust himself to these new demands? He must spend more, he must earn more. How?

The physician, like every one, is driven by the inexorable laws of political economy to consider the probable amount of property or of income of his patients that he can draw on for his compensation. There must be, more than ever, a sliding scale. The rich must pay well; the middle class moderately; the poorer class something. This course combines justice and necessity. These are cold facts not to be obscured by sentiment.

Let me not be misunderstood. The doctor is and should be charitable. He probably does more for the poor than any class of citizens does. He is oftener cheated and imposed upon by fraudulent clients; he has to bear all that and be a gentleman and an altruist; but he must look after his own living, though merciful and just.

The general principles laid down in our fee-table cover all this. A sliding scale; deductions for good reason; free advice to the poor; a minimum fee, but not a maximum.

A fair bill promotes business and confidence; but an opinion is abroad that surgery is very costly; specialties all too costly; obstetric charges prohibitory of large families.

This is a wrong condition; it is contrary to political economy to kill the goose that lays the golden egg.

The effect of very large fees is:

(1) To make a false standard; to distort the professional spirit; to discourage the patient who desires operation or treatment.

(2) To drive many to hospitals and free treatment and thus to play directly into the hands of that great abuse, the abuse of charity.

It is of great importance in seeking to do justice to both physician and patient that the latter should, if able, pay something, even if the fee be small. Gratuitous service, indiscriminately given, pauperizes the community. The doctor must live and to live he must be paid, and I am one of those who believe that half a loaf is better than no bread. The beginner in medicine will have to treat humble clients. Let him collect and be satisfied with one third of the usual fee. One dollar may be afforded when two or three dollars is a hardship.

It is no derogation of our dignity to accept what people can afford to give for our services. A minimum may be elastic and a maximum certainly should be. The sliding scale is indispensable in our professional prices. The maximum must be left to the individual conscience; why should not the minimum be also? A standard of fee, as three to five dollars, is necessary in disputed claims, in settling accounts and, above all, in courts of law.

You will say, "This is my regular and lawful fee, say five dollars, and I am entitled to it; but I do not limit my right to charge more, or, in poverty, to accept less."

Stand up to a fixed rate as your due; and claim all that is proper, in addition, from those whose wealth demands night and day continuous service, increased responsibility, and results which may be far reaching in questions of the value of some lives over others, and in the just settlement of great estates.

I cannot too strongly insist that you should be paid, and well paid, for the exhausting services and sacrifices which our profession entails, as no other calling does.

To solve these problems let us inquire what are the average incomes of different classes of citizens of Boston.

The old rule used to be that it took one thousand people to support a doctor.

That ratio is about right still; it prevails here, — six hundred regular physicians to six hundred thousand people.

We must throw out of consideration just now the irregular quacks.

The successful Boston regular physician has, or may have, 1,000 people to support him. How, and in what proportion?

Out of his 1,000 prospective patients, 100 are rich or very well to do, 650 are very moderate indeed, 250 pose as paupers and seek charity in hospitals and dispensaries.

How do we prove this? Of the 600,000 people in Boston somewhat over 60,000 pay all the taxes except a poll tax; one tenth acknowledge or are proved to have taxable property. One in ten of the population makes the 100 rich, or very well off, in each 1,000.

There were 300,000 charity visits or hospital patients in Boston last year (see Dr. Gay's paper on "The Abuse of Charity").* Suppose we concede that one half of these come from out of town, leaving 150,000, — one fourth of the population; that gives the 250 assumed or real paupers. There remain 650 moderate people to complete the 1,000: 100 rich, 650 poorer, 250 pauper, total, 1,000.

Of course, every doctor has some suburban or distant practice. We must admit this source of error.

Now, calling the family an average of five persons, and the doctor has 20 rich families, 130 very moderate families, to whom he can look for support.

Take the moderate class, — what do they earn? The laboring class, \$600 a year; the shop girl, \$500 a year; the female servant, \$200 to \$500 a year net; the good mechanic \$3 to \$4 a day, \$900 to \$1,200 a year; higher grade employees, \$1,500 to \$2,000 a year. A much, much smaller class, \$2,500 to \$3,000; \$5,000 to \$10,000.

The latter should be counted among the rich.

Of the 650 persons, or 130 families, of the moderate class, the breadwinner (often one) earns from \$600 to \$2,000 a year. The sickness which calls the doctor often stops the income; proprietary medicines and apothecary practice diminish the calls.

One dollar to the poorer; two dollars to the very moderate class; three dollars to the better grade; five dollars (as a minimum) for each visit to the well to do, does not seem to be far out of the way.

Is there any other way for the doctor to adjust himself to the new conditions than to return to first principles and adhere to a sliding scale, a wise and moderate discrimination, being as careful of not charging too high as of charging too low? What our table does not prescribe is a maximum; every man must use his judgment on his own cases.

Our fee-table has been copied as a model in many other places. I believe that our fee-table gives him all the aid anything can so judiciously guide his career. A few wise maxims from it may be fitting here:

"X. It is not designed by these regulations to prevent the members of this Association from rendering their services gratuitously to persons who are incapable of remunerating them without distressing themselves or their families; and in every case, in settling his account, the practitioner may make any deduction which he conscientiously believes that the circumstances of the patient render necessary.

"XI. No member of this Association shall omit charging any necessary visits made on the same day on account of their number.

"XII. No member of this Association shall make a previous contract with any family for a definite sum as a remuneration for his attendances on that family."

The standing committee of the Boston Medical

* BOSTON MEDICAL AND SURGICAL JOURNAL, May, 1901.

Association (Drs. John Warren, Lemuel Hayward and John Fleet, were instructed, on the first Wednesday of March, 1807, to prepare a code of medical police. They speak with no uncertain sound, as follows:

"Medicine is a liberal profession; its practitioners are, or should be, men of education; and their expectations of business and employment should be founded on their degrees of qualification."

The conduct of medical life at that early period is carefully considered.

"The *esprit du corps* is a principle of action founded in human nature, and when duly regulated is both rational and laudable. Every man who enters into a fraternity engages not only to submit to the laws, but to promote the honor and interest of the Association, so far as they are consistent with morality and the general good of mankind. A physician, therefore, should cautiously guard against whatever may injure the general respectability of the profession."

With such sentiments I cordially invite the three hundred and fifty members of the Suffolk District Society, who have not done so, to come forward at once and join this Association. The fee is small, and there are no assessments. The organization is simple, the purpose worthy. A few earnest men have kept this Boston Medical Association alive for a century. *Esto perpetua!*

Original Articles.

THE PAST OF THE BOSTON MEDICAL ASSOCIATION. CHANGES IN THE FEE-TABLE.*

BY JAMES C. WHITE, M.D., BOSTON.

I HAVE been asked to give you some brief comments on the past of our Association, and shall confine my remarks to one or two features of its history mainly, as Dr. Cheever has so satisfactorily covered all points of interest.

I was, early in my professional life, moved to express publicly my opinion of its shortcomings in relation to the inadequate fee-table it had adopted. I was at the time an editor of the BOSTON MEDICAL AND SURGICAL JOURNAL, and in the issue of Jan. 7, 1864, in the midst of the Civil War, be it remembered, was led to publish the following editorial:

"How much or how little truth there may be in the popular belief in relation to the want of unanimity of opinion among medical men we do not care to consider, but we do not hesitate to affirm that upon one subject, at least, which has been brought before every member of our profession during the past week there has been no difference of opinion. At the end of the year we cannot help reflecting, as we apply ourselves to the pleasant task of making out our bills and strike the balance between our expenditures, in which there can be no mistake, and our prospective income, of the amount of which,

alas! we are never sure, how unfairly the times are affecting us. Our marketman, our grocer and tailor and coal merchant and all our patients in their various callings have not failed long ago to discover that a dollar no longer represents what it once did, and, like sensible men, have advanced their prices in conformity to the depreciation of money. If M. is obliged to pay C. twelve dollars for a ton of coal, he demands an equivalent price for the beef he sells him, so that at the close of the year, all find their balance unaffected by the universal increase in the expenses of living. We, however, have gone on paying them on the spot all they demand, while for our own services we have been foolishly content to ask them to pay, if they please, a price fixed for us long ago, and almost as little proportionate to the present standard of money as if it were expressed in wampum; and it is this reflection which should have come to every physician during the past week, in sight of the immense difference in the relative increase in the amounts upon the debit and credit columns of his account book, that some concerted and immediate action should be taken with regard to the reformation of the present fee-table. We say concerted, for we know that certain gentlemen, whose patients are the rich, and whose incomes are such that household expenses need cost them no anxiety, have taken independent action in the matter, and pay little, if any, regard to the laws of our medical police, while the young and less fortunate are obliged in most cases to be content with the old minimum fee and dare not exceed the maximum in their few best families. Did the amount of practice like other business increase in proportion to the surrounding prosperity, we might find in such increase the remedy for our present wants; but, fortunately for mankind, plenty and joy do not make the sick list longer, but smaller, and the physician's services are most in demand when adversity and poverty deprive the patient of the means of repayment. We trust, therefore, that the Boston Medical Association will take the matter into earnest consideration and revise its present code at this opportune season, so that the public may be informed at the beginning of the year of a change which should have been made long ago."

These opinions were regarded by many of the older and most influential members as imprudent and almost revolutionary, and the editor received many remonstrances from them. Nevertheless, in April, just before the annual meeting of the Association, he reiterated these views in a second editorial, adding: "We have always been far too modest in our estimate of the value of our services, and in order to obtain anything like the competency which follows a successful career in the law, have been obliged to do at least twice the amount of work. Hence the necessity of continuing active practice far into old age, and the non-attainment of that leisure for study so essential to the future rank of medicine in this country. We may place what

* Remarks made at the Centennial Meeting of the Boston Medical Association, May 7, 1906.

value we please upon our labor, but unless the profession consider its own services as worthy of as high reward as those of any other, it can hardly expect the public to recognize their importance."

In the meanwhile the younger members especially had become convinced that some action should be taken with regard to the question, and at the annual meeting held May 2, 1861, after a so-called "animated discussion," a committee, consisting of Drs. J. Mason Warren, George Bartlett, Charles E. Buckingham, George H. Gay, Charles D. Homans and James C. White was appointed to revise the rules and regulations and fee-table. Their report was presented on June 13, and after debate was adopted. The most important changes made in the fee-table were: the increase in the ordinary charge for a visit from one or two dollars to three dollars, and the maximum for a consultation from five dollars to ten dollars. I may add that before the year 1861 had run its course I had received many confessions from the principal opponents of the increase of their satisfaction that their conservative views had not prevailed.

I may be permitted to make one or two other comments upon some features of the fee-table then adopted and the Rules of the Society. I quote the following paragraph from the former:

"It is recommended that in the treatment of gonorrhea or syphilis the first charge shall be from five to ten dollars" instead of that of three to five dollars as in other diseases. Here a discrimination was made on the basis of morality. Could any measure be more uncharitable or bigoted? Affections of the gravest character, often contracted in the most innocent ways, liable to be communicated to members of the patient's family and transmitted to offspring, requiring utmost skill at times for early recognition, of which our profession itself is the frequent victim, to be thus stamped as a disgrace rather than a misfortune, and forced in this way into the claws of quacks, or neglect for economy's sake or false shame! In the last edition, 1903, this clause remains unchanged.

I want to say a word also in reference to the "Code" regarding consultations. It reads: The attending physician "should deliver all the medical directions as agreed upon." In my opinion this procedure is often a mistake at least as concerns consultations with specialists. Diagnosis is only one of the objects of such meetings, and the success of special treatment depends largely on the exactness with which the details of the measures advised are carried out. The more directly, therefore, these are given to patient and nurse the better, and I believe they should be communicated first hand to them, or at least be given in their presence. I am convinced, moreover, that it would be better in my own department if in some cases subsequent consultations were held, or the patient were placed in the immediate charge of the specialist, so that the results of the remedies advised could be observed by him, and the treatment be mod-

fied according to the natural changes of the affection. Speaking without conceit or motives of self-interest I am sure that in such way only can the best results be secured to the patient.

Other questions concerning the relations between specialists and the general practitioner have arisen since the formation of the code, which are not defined therein and are at times the cause of jarring and ill-feeling between members of the profession. It is not so long ago that the so-called family physician felt that he held full control over all medical relations of his families, and that with him rested the whole authority of deciding when any outside advice should be sought; that is, that no surgeon or specialist should be consulted without his suggestion or consent, and in those days there was strong opposition to the very existence of the specialist. I have known men holding high and official positions in the profession to exhibit outspoken opposition to their recognition in any form, and to express open anathema against them on all occasions. There was justification, perhaps, for this feeling towards the surgeon until surgery became a real specialty or an exclusive department of practice, because sometimes, no doubt, he may have used his occasional service as a means of securing an additional family upon the list of his general practice, but there were no just grounds for such animosity towards the specialist who did no work outside his department. Now that our knowledge of medicine has enlarged so vastly that no man can possibly acquire it all, it has slowly become recognized both by the profession and laity that specialists are a necessity, and the latter have come to believe that they have the right to consult them independently of the relations of the family physician. Without such freedom on their part it is evident that the specialist in some branches could not exist, to the detriment of medicine and humanity. Although this new order of the division of labor has been accepted by the body of the profession, there still lingers a considerable opposition to this condition of independence, and if codes could regulate completely the ethics of our profession, it might be advisable to recognize in ours the changed relations of modern practice in this respect. Reverence for commandments or ordinances, however, is no longer a powerful factor in our professional conduct, and we must leave to time the complete adjustment of such differences. There can be no serious clashing where mutual respect prevails.

A BIOGRAPHIC CLINIC ON TCHAIKOVSKY

BY DR. H. W. GALT, M.D., CHICAGO, ILL.

"Nervous tension," "nervous irritability," "depression," "illness," and such terms are constantly met in the biography and letters of Tchaikovsky. That these symptoms began to appear early in his life and were always connected with study, school life, or literary work, may be seen by the following quotations:

The numbers following the quotations indicate their place in the

This nervous tension began to be apparent, not only in his pallor and emaciation, but in frequent ailments that kept him from school. There was also a moral reaction, and the boy became capricious, irritable and unlike his former self. (Biog. S.)

Peter's nervous irritability was much increased by the illness, and the doctors believed he was suffering from some spinal trouble. All work was forbidden, and the invalid rested for six months. After a time, quiet and freedom from lessons improved the boy's physical health, but his moral character did not entirely regain its former cheerful serenity. The wound was healed, but the scar remained. (Biog. 9.)

The change from St. Petersburg, while it proved beneficial to Peter's health, did not cure his indolence, capriciousness and irritability. (Biog. 10.)

His parents did nothing, however, to further his musical education, partly because they were afraid of a return of his nervous disorder. (Biog. 10.)

When one seeks the data for a biographic clinic upon a patient, it seems at first glance that there is given a dearth and inexactness in the hints such that the results must be too vague and unscientific to yield an undoubted diagnosis. The untruth of the criticism, however, is turned to surprise when it is found that in a score of such cases the patients suffer in the same ways; that although unknown to each other, they express themselves in almost the same terms; that their physicians could not guess what ailed them, nor how to cure them; that the disease kept on despite all the "cures," drugs, dietaries, journeys and spas, ordered by the physicians; and that unconsciously the sole relief (never permanent cure) was by one common procedure. We feel sorry that Tchaikovsky destroyed those diaries which would have made conviction more certain, and yet, putting the composite photographs of the score of cases on the same plate, they cover and reinforce the lineaments and expressions as if but one sitter were present. Then when the reader is a modern physician, who has seen a thousand identical cases in his daily practice, and has cured them, there remains no scintilla of doubt as to what was the essential cause and nature of the single disease with which the dead patients were tormented.

The cause that produced Tchaikovsky's "nervousness," "irritability," "tension," "illness," "spinal trouble," etc., when he was eight, nine and ten years of age, and forced him to stop study, and his musical education, grows more and more evident to the reader in the history of the following years. When he was twenty-six, he had "a terrible nervous breakdown" (the term is as common and as senseless now as it was fifty years ago), he "narrowly escaped madness," — all caused by composition at night.

By 1875 the chronic malady had made considerable progress. It did not return at intervals as heretofore, but had become a constant trouble. According to his own account, he was depressed all the winter, sometimes to the verge of despair. He felt he had reached a turning-point in his existence, similar to that in the sixties. (Biog. 35.)

Tchaikovsky's health broke down. According to a telegram which he sent to Petersburg, he left Moscow

suddenly on Sept. 24 (Oct. 6), in a condition bordering upon insanity. (Biog. 37.)

The mental and moral disorder which attacked Tchaikovsky during the course of this season, and gradually took firmer hold upon him, until in 1877 it reached a terrible crisis which nearly proved fatal to his existence. (Biog. 37.)

Anatol says that his brother was scarcely recognizable when he met him on the platform of the Nicholas Station in Petersburg; his face had entirely changed in the course of a month. From the station he was taken to the nearest hotel, where, after a violent nervous crisis, he became unconscious, in which state he remained for forty-eight hours. When this crisis was over, the doctors ordered a complete change of life and scene as the sole chance of recovery. (37.)

I am still quite a sick man. I cannot bear the least noise as yet. Yesterday in Florence, and to-day in Rome, every vehicle that rolled by threw me into an insane rage; every sound, every cry exasperated my nerves. (Biog. 37.)

The dangerous crisis in his illness was over and a slow convalescence began. (Biog. 37.)

I am ill, mentally and physically; just now I could not live in any situation in which I had to be busy, agitated and conspicuously before the world. (38.)

There were moments when I experienced such a complete loss of strength that I feared for my life. (49.)

From the 1st to the 19th of November I endured martyrdom, and I am still marvelling how I lived through it all. (49.)

"Curious fact," he remarks in his diary, "I seek solitude, and suffer when I have found it." In this state of fluctuation between *bad* and *worse* Tchaikovsky had spent his time since he left Russia. (Biog. 49.)

Every careful oculist has found that his patients report that their headaches, nervousness, irritability, dyspepsia, catarrh of the stomach, "migraine," sick headache, insomnia, depression of spirits, etc., depend upon the use of their eyes in reading, writing, sewing, and other kinds of "near-work." In every one of the twenty cases studied in the *Biographic Clinics* I have reported, the same cause of suffering has been overwhelmingly evident. In that of Tchaikovsky the proofs are abundant. For instance:

He began this work in Moscow during the spring, and it was the cause of his nervous disorders and numerous sleepless nights. These difficulties were partly caused by his want of experience in composition, and partly by his habit of working by night as well as by day. At the end of June he had a terrible nervous breakdown, and the doctor who was called in to see him declared he had narrowly escaped madness, and that his condition was very serious. The most alarming symptoms of the illness were his hallucinations and a constant feeling of dread. That he suffered intensely is evident from the fact that he never again attempted to work through the night. (26.)

This feverish work told upon Tchaikovsky's nerves. His health was so far impaired that he gradually lost strength, until he became quite exhausted and the doctor ordered him to the seaside, or to an inland watering-place, enjoining absolute repose. (Biog. 29.)

The composer's melancholy became a shade darker. "I just idle away the time cruelly," he writes, "and my opera, *The Oprichnik*, has come to a standstill at the first chorus." (Biog. 30.)

At the present moment I am absorbed in the symphony I began during the winter. Add to this, I am in a very nervous, worried and irritable state, highly

unfavorable to composition, and even my symphony suffers in consequence. (37.)

I was horribly out of spirits all the time I was composing this symphony last winter. (38.)

On Aug. 7 Tchaikovsky finished the third act of *The Maid of Orleans* and, suffering from physical and nervous exhaustion, left Kamenka for Simaki. (Biog. 37.)

It is my chief anxiety to write more easily and simply as time goes on, and the more I try, the worse I succeed! It is dreadful! (39.)

I am very tired after my day's work. To-day I wrote the love duet in the second act, and it is very complicated, so that at the present moment my brain works with difficulty. I jumped from the first scene of the third act to the fourth, because it is not so easy and I wanted to get the most difficult scene — between Lionel and Joan — off my mind. On the whole I am pleased with myself, but feel rather exhausted. (39.)

To squeeze music out of one's brain every day for ten weeks is indeed an exhausting process. (39.)

... the resolve which already existed in his inmost heart, never to return to his old way of life. He attributed this dislike of his former existence to his ill-health, and cherished the hope that the ideal conditions of his life abroad would restore his nerves and soothe his irritability; he was convinced that he would completely recover and took up his professorship once more with a stout heart. (Biog. 38.)

But it proved otherwise. From the month of January, when he was able to arrange his life as he pleased, when, with improved health, the desire to compose awoke once more — from the moment, in fact, in which his real recovery began — life in Moscow seemed to him to be more dreadful and impossible. (Biog. 39.)

Maizeppa creeps along tortoise-fashion, although I work at it daily for several hours. I cannot understand why I am so changed in this respect. At first I feared it was the loss of power that comes with advancing years. (42.)

It now takes me three days to orchestrate a thing that I could formerly have finished in one. (42.)

This undefinable, horrible, torturing malady which declares itself in the fact that I cannot live a day, or an hour, in either of the Russian capitals without suffering, will perhaps be explained to me in some better world. (42.)

The Valse gives me infinite trouble. I am growing old. (44.)

After dinner I squeezed the unsuccessful movement out of my head. What does it mean? I now work with such difficulty. Am I really growing old? (44.)

On returning from a journey he invariably began with his correspondence, which, next to proof-correcting, he found the most unpleasant work. In the nineties his correspondence had attained such volume that Tchaikovsky was frequently engaged upon it from morning till night and often answered thirty letters a day. (Biog. 45.)

A few weeks ago I accidentally took up his *Germania*, began to read it, got interested and only finished it late at night. I was so upset that I had palpitation and sleep was impossible. Next day I was quite ill. (45.)

My age — although not very advanced — begins to tell. I get very tired now, and can no longer play or read at night as I used. (48.)

I enjoyed writing the first movement, whereas the others were the outcome of strenuous effort, in consequence of which — as far as I remember — I felt quite ill for a time. (48.)

For a long time past letter-writing had ceased to

be a pleasant duty; still, it remained a duty, which he could only neglect under special circumstances. (Biog. 49.)

Just two months ago I began the composition of the opera. To-day I finished the pianoforte score of the second act. This is to me the most dreadful and nerve-exasperating occupation. I believe my ill-health is simply the result of this confounded work. Nazar says I have very much altered the last week or two, and have been in a dreadful state of mind. Whether it is that the worst and most wearisome part of my work is nearing an end, or that the weather is finer, I cannot say, but since yesterday I feel much better. (50.)

My brain is empty; I have not the least pleasure in work. *Hamlet* oppresses me terribly. (51.)

I finished the sketch of the ballet yesterday. You will remember my boasting when you were here that I should get it done in about five days. But I have taken at least a fortnight. Yes, the old fellow is getting worn out. Not only is his hair turning white as snow and beginning to fall, not only is he losing his teeth, not only do his eyes grow weaker and get tired sooner, not only do his feet begin to drag — but he is growing less capable of accomplishing anything. (51.)

Just now I am busy looking through the pianoforte score of *Iolanthe*. It bothers and annoys me indescribably. Before I went abroad in May I had sketched the first movement and finale of a symphony. Abroad it did not progress in the least, and now I have no time for it. (52.)

Tchaikovsky so often speaks in his letters of his dislike to this kind of work (corrections of orchestral score) that he must have needed extraordinary self-abnegation to take this heavy burden upon his shoulders. (Biog. 52.)

At last, at the very end of August, the vast accumulation of proof-correcting was finished, which, as he himself said, would have almost driven him out of his mind, but for his regular and healthy way of life. (Biog. 52.)

His persistent use of minor keys — the vehicle of doubt, aspiration, longing, morbidly self-bounded thoughts. (Mason.)

Despite his everlasting journeyings and walking, there was a solid basis of eye-labor and accomplished work in Tchaikovsky's life:

A glance at the number of his works, which reaches seventy-six, including ten operas and three ballets, at his letters (I possess, in all, four thousand); at his literary work (sixty-one articles); at his translations and arrangements, and his ten years' teaching, will suffice to convince the most-skeptical that his nature knew no moods of *delirium*. (Lariche.)

It appears strange that the sufferer should so persistently see that his "ill-health was the result of his confounded work," and still not recognize its connection with ocular labor, but to-day both the public and the profession still stick fast in the same error of observation and logic: both continue to attribute the morbid results to "brain-fag," "intellectual labor," and all the rest — oblivious of the fact that intellectual labor does not exhaust and that the function of the eye, the most important, complex and delicate of all the organs of the body, is forgotten.

What then shall be said of the obverse of the fact — the ever-freshly illustrated truth, that

ocular rest, or walking, journeying, country life, living out of doors, etc., are the sole but certain means of getting relief from the suffering due to near-work with the eyes? As with others, so with Tchaikovsky, winter and bad weather, which confined him to the house and compelled greater use of the eyes at near range, increased all sorts of misery and ill-helath, while spring and summer and a warmer climate (especially in the Russias) at once brought health and happiness. Note the proofs of this clinical experience in Tchaikovsky's case:

Before the summer holidays came, Tchaikovsky's health was in an unsatisfactory condition. He complains in his letters of insomnia, nervousness and the throbbing sensations in his head, to which he often refers as "my apopleptic symptoms." At the end of April his depression became very apparent and he wrote to his brother Anatol:

"My nerves are altogether shaken." (26.)

We had a monotonous existence, and are dreadfully bored, but for this very reason my health is first rate. The saline baths do me a deal of good, and, apart from them, the way of living is excellent. I am very lazy, and have not the least desire to work. (30.)

I rush about like one possessed and never feel tired. (30.)

His constitution was so shaken and impaired by his nervous illness that at least a year's rest was necessary for his complete restoration. (Biog. 37.)

The condition of his health needed complete repose. (Biog. 37.)

His ideal of a summer residence, for which he longed as soon as the trees and fields began to show the first signs of green. (Biog. 30.)

Although the spring is still far off and the frosts are hardly over yet, I have already begun to think of the summer, and to long for the early spring sunshine, which always has such a good effect upon me. (30.)

These periods of hypochondria. All this winter I have been depressed to the verge of despair, and often wished myself dead. Now the spring is here the melancholy has vanished, but I know it will return in greater intensity with each winter to come, and so I have made up my mind to live away from Moscow all next year. (35.)

The few days spent here have done me a great deal of good. First, I have been able to work a little, so that my brother will take the second scene of the opera—not quite finished—back to Moscow with him. Secondly, I feel much better, although I was not very well yesterday. It is only a slight chill, however. (37.)

With the coming of spring Tchaikovsky's depression passed away, and he spent the Easter holidays very happily. (Biog. 37.)

On the point of taking leave of foreign lands and turning my face homewards, a sound, sane man, full of renewed strength and energy. (38.)

The sense of increased energy and strength, which always came to him in the lonely life of the country, was unknown in the bustle and stress of the city. (38.)

I know no greater happiness than to spend a few days quite alone in the country. (38.)

Wandered for whole days together in the forest, spent the evenings on the low-lying steppe, and at night, sitting at my open window, I listened to the solemn stillness, which was only broken at rare intervals by some vague, indefinite sound. During this fortnight, without the least effort—just as though I were under the influence of some supernatural force

—I sketched out the whole of *The Tempest* overture. (38.)

There came over me that feeling of intense delight which I so often experienced during my country rambles in Russia, and for which I have longed in vain since I have been here. I was alone in the solemn stillness of the woods. Such moments are wonderful, indescribable, not to be compared with any other experience. The indispensable condition is—solitude. I always like walking alone in the country. (38.)

I am feeling splendidly well. My physical health is first rate, my head clear and strong. I observe myself with delight and have come to the conclusion that I am now completely recovered. (38.)

Now I am quite recovered I ought to return to Russia to take up my duties at the Conservatoire and my old ways of life. (38.)

The fact that I profited by your wealth to travel abroad for my health's sake. (38.)

I am in a rose-colored mood. Glad the opera is finished, glad spring is at hand, glad I am well and free. (38.)

I am doing nothing whatever, only wandering through the forests and fields all day long. I want to take a change from my own work, with its eternal proof-correcting. (40.)

Throughout the whole year I have led a calm and cheerful life, and have been happy, so far as happiness is possible. (40.)

My mental condition was such that I had to collect myself first. What produces this terrible state? I do not understand it myself. . . . Everything has tended to make to-day go pleasantly, and yet I am so depressed, and have suffered so intensely, that I might envy any beggar in the street. It all lies in the fact that life is impossible for me, except in the country or abroad. Why this is so, God knows—but I am simply on the verge of insanity. (42.)

It seems my lot to be always hurrying to finish something. I know this is equally bad for my nerves and my work, but I cannot control myself. I only rest when I am on a journey; that is why travelling has such a beneficial effect on my health. (43.)

After the terrible illness in 1877 he found in Kamenka, far more than in San Remo, Clarens or France, all he needed for his recovery; during these seven years, it was at Kamenka that he gathered force and recuperated for the life which was becoming infinitely more strenuous and many-sided. (Biog. 37 to 44.)

Wet or fine, Tchaikovsky always went for a walk after dinner. He had read somewhere that, in order to keep in health, a man ought to walk for two hours daily. He observed this rule with as much conscientiousness and superstition as though some terrible catastrophe would follow should he return five minutes too soon. (Biog. 45.)

Before supper, which was served at 8 p.m., Tchaikovsky always took another constitutional. (Biog. 45.)

The three months I spent abroad were lost time as regards work, but I feel I have gained in strength, and can now devote my whole time to it without exhausting myself. (46.)

If only I were twenty years younger!! One thing is certain: my nerves are much stronger, and things which formerly were not to be thought of are now quite possible. Undoubtedly I owe this to my free life, relieved from all anxiety of earning my daily bread. (47.)

My health is not good. . . . In Carnival week I suffered from the most peculiar nervous headaches. . . . As I felt sure my accursed and shattered nerves were to blame, and I only wanted rest, I hurried into the country. (48.)

I find more and more delight in the cultivation of flowers, and comfort myself with the thought of devoting myself entirely to this occupation when my powers of composition begin to decay. (50.)

He was always fond of moving about. He could not remain long in one spot. But this was chiefly because it always seemed to him that "Every place is better than the one in which we are." Paris, Kamenska, Clarens, Rome, Brailov, Simaki, Tiflis—all in turn were his favorite resorts, which he was delighted to visit and equally pleased to quit. But apart from the ultimate goal, traveling in itself was an enjoyment rather than a dread to Tchaikovsky. (Biog. 52.)

No sooner had he reached home again than he began planning yet another tour. It seemed as though he had become the victim of some blind force which drove him hither and thither at will. This power was not merely complaisance to the demands of others, nor his old passion for traveling, nor the fulfillment of a duty, nor yet the pursuit of applause; still less was it the outcome of a desire for material gain. This mysterious force had its source in an inexplicable, restless, despondent condition of mind, which sought appeasement in any kind of distraction. I cannot explain it as a premonition of his approaching death; there are no grounds whatever for such a supposition. Nor will I, in any case, take upon myself to solve the problem of my brother's last psychological development. (Biog. 52.)

All day long I wander in the forest and bring home quantities of mushrooms. (53.)

Many of his works were planned and his themes invented in these long rambles across country. Mason.

Without the key supplied by the oculist, any reader of the Life and Letters of Tchaikovsky must be as unable, as was his biographer, to explain the apparently insensate necessity for country life, journeys, concert tours and travel over all the countries of Europe, with one trip to the United States. If, at least earlier in his life, he had made a trip to the United States solely to get a scientific pair of spectacles, I scarcely doubt that he might be living to-day. It was certainly not the love of music that caused us to send for him, nor that motivated his own coming. The sorry account of his visit here would be ludicrous if it were not underlain with tragedy for the composer, and shame for us. To those who have not learned that personal happiness depends upon the little and overlooked blunder or habit, it will appear ludicrous to say that the one thing which all Europe could not have given him, and which we alone were capable of giving him, would have been of infinitely more value to him than all the money, buzzes, interviews, and advertising with which we prided ourselves in cursing him.

But resistance, reaction, recuperability, under long-continued "insults" and after unheeded warnings, are finally lost. This loss, as we have so often seen, is likely to fall in the period of presbyopia, when eye-strain is doubled, and the two misfortunes unite to bring about the final catastrophe. Without needless repetition and emphasis, it is particularly noteworthy that Tchaikovsky's maladies increased in intensity as he entered upon the presbyopic period, and

they became more and more unendurable as he advanced in it. There is nothing more pathetic than the added poignancy of his cries with each year from thirty-eight to fifty, and it is most pitiable that when reaction is no more possible the old relief and happiness, once so evident, from country-life and journeying, no more returns:

I will not conceal it: all the poetry of country life and solitude has vanished. I do not know why. *Nowhere do I feel so miserable as at home.* If I do not work, I torment myself, am afraid of the future, etc. Is solitude really necessary to me? When I am in town, country life seems a paradise; when I am here, I feel no delight whatever. To-day, in particular, I am quite out of tune.

I am passing through a very enigmatical stage on my road to the grave. Something strange, which I cannot understand, is going on within me. A kind of life-weariness has come over me. Sometimes I feel an insane anguish, but not that kind of anguish which is the herald of a new tide of love for life, rather something hopeless, final, and—like every *finale*—a little commonplace. Simultaneously a passionate desire to create. The devil knows what it is. In fact, sometimes I feel my song is sung, and then again an uncomprehensible impulse, either to give it fresh life, or to start a new song. . . . As I have said, I do not know what has come to me. For instance, there was a time when I loved Italy and Florence. Now I have to make a great effort to emerge from my shell. When I do go out, I feel no pleasure whatever, either in the blue sky of Italy, in the sun that shines from it, in the architectural beauties I see around me, or in the teeming life of the streets. Formerly all this enchanted me, and quickened my imagination. Perhaps my trouble actually lies in those fifty years to which I shall attain two months hence, and my imagination will no longer take color from its surroundings. But enough of this! I am working hard. Whether what I am doing is really good is a question to which only posterity can give the answer. (50.)

This thought and experience gives significance to the awful and hot-pressed beauty of the Pathetic Symphony, the last and greatest of the composer's works. Mason asks:

. . . Has not disease, as well as health, its relations to our fortunes? . . . His mental temper, never bright, was shadowed with a pathological gloom throughout his life.

To be continued.

THE TREATMENT OF UNUNITED FRACTURES OF THE NECK OF THE HUMERUS BY OPERATION, WITH REPORT OF A CASE.

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THE obtaining of bony union in ununited, intra-capsular fractures of the neck of the humerus, those fractures which he wholly within the capsule of the joint is rare under any form of treatment by apparatus alone. This is due to the fact, because of the meager blood supply to the head of the femur, emphasized by its position. It is chiefly because of the distal blood supply, and the rate fixation of the parts, of the distal end, that

The various methods of extension apparatus, with straps or swathes around the pelvis, or of plaster of Paris spica bandages with the lower extremity in abduction, with or without screw pressure over the trochanter, are all uncertain and tedious procedures, which in the majority of cases will fail to cause union. These methods require long periods of confinement in bed and make large drafts upon the strength of the patient, and in cases advanced in years are not infrequently the cause of death.

The only certain method is that of pegging or nailing the fragments together in their proper relation, as was done in the case reported below. In fresh fractures, especially in cases of advanced age, or feeble condition, the question should be raised as to whether or not the method of direct nailing without an open incision should be adopted, as has been done most brilliantly in many cases by Nicolaysen¹ of Christiania. Later in this paper this very important work of Nicolaysen will be described; it is worthy of marked consideration. In those cases in which several weeks or months have elapsed since the injury, the method of nailing after the fragments have been examined and scraped through an anterior incision is doubtless preferable. It is the opinion of the writer that the method adopted in the case to be reported is the simplest and gives the best opportunity of examining the surfaces of the fragments and of placing the nail with accuracy.

It is surprising how few of these operations for ununited intracapsular fractures of the neck of the femur have been reported. Freeman² could find reports of but thirteen cases up to 1904 beside his own. In addition to these the writer has been able to find reports of six additional cases operated upon in this country and England: the cases of Morris,³ Thompson⁴ (2), Guthrie,⁵ Cheyne,⁶ and Peckham.⁷ So far as is known, the twenty-one cases of direct nailing without open incision reported by Nicolaysen have never before been included in any paper.

Report of the writer's case:

J. H., eighteen years old, was admitted to the south surgical service of the Massachusetts General Hospital in July, 1902. Through the kindness of Dr. H. H. A. Beach, the senior surgeon of the service, the writer, his assistant surgeon, was given charge of the case. The boy had been sent to the hospital with a diagnosis of dislocation of the hip, which diagnosis was found to be in error, especially after the x-ray plates were seen. Nine weeks before entrance, while crossing the street, he fell injuring his right hip; total disability and loss of motion with much pain in the hip followed. As long as he could remember his right leg had been shorter than the other, the result of some children's disease, yet he could always walk upon it with but slight limping and could run and play as well as the other boys. He evidently had had for years a somewhat shortened and atrophied leg, the result of infantile paralysis. He had been confined to bed since the injury.

Examination.—A fairly well nourished and developed boy; nothing abnormal aside from the condition of the right lower extremity found. The right thigh

and calf showed more muscular atrophy than could be accounted for by the comparatively recent injury. The right extremity was three inches shorter than the left. There was some flattening of the right buttock and some tilting of the pelvis. The top of the trochanter could be felt three inches above Nelaton's line; this upward displacement of the shaft of the femur could not be reduced. The x-ray plates showed an intracapsular fracture of the neck of the femur, with much upward displacement of the shaft. A small amount of callous formation was seen to have taken place.

The patient was operated upon by the writer July 31, 1902. With the patient lying upon his back, an incision down the front of the thigh, from the anterior-superior spine of the ilium was made. By blunt dissection between the tensor vaginæ femoris, sartorius, and rectus extensor muscles, the capsule of the hip joint was exposed. It was not found necessary to cut any muscle fibres, and by using strong retractors to pull the sartorius and rectus muscles inward a good exposure of the anterior surface of the capsule of the joint was made. The capsule was opened by an incision parallel with the fibres of the "Y" ligament, upon which the diagnosis of ununited intracapsular fracture was found to be correct.

With a chisel and curette the surfaces of the fragments were scraped and a slight amount of loose callus and some fibrous tissue was removed. By extension and traction on the foot, with some abduction, the trochanter was brought down so that the neck came in proper relation to the head of the bone, which was in the acetabulum. While the extremity was held in this position, an incision was made in the outer part of the thigh, directly over the external surface of the trochanter, and a long steel wire nail, freshly polished, was driven through the trochanter and neck of the femur into the head of the bone in its socket. The anterior wound gave full opportunity to guide the nail with the finger, so that one could make sure of its direction and proper fixation in the head of the bone; this is one of the most important parts of the operation. After driving the nail, the capsule was closed with two catgut stitches and the muscles and fascia approximated as carefully as possible. The anterior skin incision was closed without drainage with silkworm gut stitches, and the external incision, which was made to take the nail, was closed over the head of it. This was done to prevent any possibility of infection traveling down the nail shaft. The extremity was put up in a plaster of Paris spica bandage from the waist to the toes, great care being taken to hold the limb rigid and fixed in position during the application.

There was almost no reaction from the operation and no sign of wound infection. On the tenth day after operation, windows in the plaster were cut over the lines of incision and the stitches removed from both wounds, which were found to have healed by first intention. The plaster bandage was then reinforced. On Sept. 12, six weeks after the operation, the plaster of Paris bandage was taken off and the nail removed after cutting down upon and exposing it under cocaine anesthesia. It was pulled out with little difficulty. The union appeared to be firm at this time, but the plaster of Paris spica was re-applied. On the 28th of September, two months after operation, the plaster of Paris spica was removed finally and the patient allowed to lie in bed without any dressing. At this time the fracture had united firmly and there was motion in the hip joint, half flexion and some rotation, but abduction was slight. On the 1st of October he was up and about on crutches. On the

20th of October, less than three months after the operation, he was able to walk about as much as he pleased with his shoe built up somewhat.

It has been previously stated that before the injury his right leg was shorter and smaller than the other. The result of the operation has been that there is somewhat more shortening in the extremity than before the injury, and examination showed that union had taken place with the top of the trochanter higher than it was supposed to be when the fracture was put in accurate position and the nail driven. This may have been the fault of the technique at the time of operation, either in driving the nail or in holding the extremity in position while the plaster of Paris bandage was being applied. In this connection, however, Nicolaysen, whose experience in nailing this form of fracture is larger than that of any other man, although he does not use an open incision, has called attention to the fact that this recoil of the shaft is to be expected in nearly all nailing operations, because of the early absorption of the cancellous bone around the nail.

This young man obtained, however, perfectly solid union and a useful hip joint. The writer has had the opportunity to examine this case from time to time since the operation. When last seen, three years after operation, the result was very satisfactory. The patient thought that his leg was but slightly shorter than before the injury and that he had just as useful a limb.

The main points in the technique of the operation are as follows: Scrupulous preparation of the skin for a period of two days, if possible, before the operation, inasmuch as the anterior incision is near the fold of the groin; blunt dissection, with division of the capsule parallel to the fibers of the "Y" ligament; clearing of the fragments from callus and fibrous tissue; careful placing of the nail and suturing of the skin over the head of it; this is of the greatest importance to prevent infection and suppuration along the nail track; and the application of a strong and close-fitting plaster of Paris spica bandage while the extremity is held by a skilled assistant with a view to preventing any displacement. It has been found that an ordinary round wire nail with three-cornered point is superior to any form of ivory peg or screw.

As was stated at the beginning of this paper, the operation of pegging or nailing fractures of the hip is an uncommon one, but in most cases is a necessary procedure to secure union. The operation in this country has been done seldom in fresh fractures, surgeons have preferred in most instances to await the result of treatment by apparatus, and have chosen to operate only in cases in which such treatment was unsuccessful. The difficulty of determining whether or not a fracture is entirely intracapsular may have had something to do with this. The form of fracture in which union is least likely without such an operation is the complete intracapsular variety.

There has been much difference of opinion as to whether true bony union in unimpacted intracapsular fracture of the neck of the femur ever takes place without operation. Senn⁸ has written much to prove that such true union can take place. He collected fifty-four cases up to 1883 in which he thought that bony union could be proved. There is no doubt but that bony union has occurred and can occur, but the opinion of Kocher⁹ in regard to the subject is in all probability the most accurate. He thinks that pure intracapsular fractures are very rare, and that many of the cases that have been called such in the past are real intertrochanteric fractures which are partially extra- and partially intra-capsular, with more or less tearing of the capsule. He states that he had only seen ten cases in his experience up to 1895 in which a diagnosis of complete intracapsular fracture could be made. He admits that true bony union may take place, however, but very seldom. He regards most of the fifty-four cases reported by Senn as mixed fractures.

In all probability, the cases reported in which union resulted from treatment by position and bandages were cases of intertrochanteric fractures and not true intracapsular fractures. Since the days of the x-ray obviously there has been a chance to form more accurate opinions as to the location of the fracture and the comparative value of treatment. It seems rational to begin a fresh study of this subject with the aid of x-ray photography. The old difficulties of accurate localization of the fracture and uncertain proof of the kind of union in living cases no longer exist; the old figures as to the relative frequency of extra- or intra-capsular fractures are of comparatively little value to-day. It can be stated positively that true intracapsular fractures are very rare.

The first operation was done by von Langenbeck in 1858 with fatal result. Sir William MacCormac,¹⁰ speaking of this operation, stated that he had used pointed iron nails with good results; that Lister had had a similar case in which he was not successful in securing union; that König had repeated von Langenbeck's operation, using a silver screw with a successful result in every way. The method of these earlier operations was to make a small incision down to the trochanter and to drill more or less at haphazard through the neck of the femur, drilling and driving the nail or screw without the guidance of the eye or finger. The difficulty in this procedure is the uncertainty of getting the nail or drill into proper position and into the small and unstable fragment of the head of the bone. The head is very difficult to keep steady during the boring or nailing, and to pierce it at the proper point from without, in the experience of the writer is far from easy. The first operation in this country was done by Wm. Meyer¹¹ of New York in December, 1892. He used the von Langenbeck incision and used two nails; the operation resulted in union and a useful limb. The operation performed as outlined in the writer's case

and the operation of choice by most surgeons, was suggested by Trendelenburg.¹²

Dr. A. J. Gillette¹³ has reported three cases in which this form of fracture was treated by the use of ivory pegs instead of nails, and with a different incision than the one adopted by the writer, namely, making a horseshoe-shaped incision, beginning it an inch below and an inch posterior to the anterior-superior spine of the ilium, carrying it down two inches below the trochanter major and bringing it up the buttock to about the centre of the gluteus maximus muscle; the skin, superficial and deep fascia are dissected *en masse*. A chain saw is then passed between the posterior border of the tensor vaginæ femoris muscle and the gluteus medius, hugging the neck of the femur and the base of the trochanter major, and is brought out between the posterior surface of the gluteus medius and anterior surface of gluteus maximus, thus sawing off the trochanter major and its muscular attachments, which are then turned back, making an exposure of the capsule of the joint; the line of the fracture through the neck of the femur can be easily seen. The surfaces of the fractured ends are denuded and a bone peg driven through the neck of the femur, thus holding the ends together. The capsule is then stitched with catgut, the trochanter major nailed with a small bone peg back to its original position, the skin and fascia flap is then sutured and a silicate spica applied. There can be no advantage from this incision; on the other hand it must be decidedly disadvantageous and dangerous to divide so many muscular attachments and to separate temporarily the trochanter from the rest of the femur; the simple anterior operation is all that is necessary.

Sayre, of New York, in discussing Gillette's paper and this radical incision, stated that he had made an anterior incision, freshened the ends of the bone, then pinned them together with a gimlet and two nuts. Parkhill¹⁴ suggested a modification of his well-known fracture clamps, but so far as can be ascertained these clamps have never been used. Davis,¹⁵ of Philadelphia, has used substantially the same method adopted by the writer in two cases with good results. Freeman reports a successful case and discusses the possibility of using clamps; he used a steel screw instead of a nail.

The work of Nicolaysen, in Norway, has been very successful and demands recognition. So far as known, the results of his work have not as yet been published in English. A study of his cases and results leads one to believe that his methods are deserving of frequent use in fresh cases of unimpacted intraepicapsular fracture. The method is specially noteworthy as applicable to fractures in individuals of advanced age. Nicolaysen has practiced this form of treatment at the state hospital in Christiania since 1894. He has reported, up to 1900, 21 cases, 8 males, whose ages ranged from thirty-nine to seventy-eight years, and 13 female patients, whose ages ranged from fifty to eighty-two years. The

results in all cases were satisfactory, a firm union and useful joint resulted. Nicolaysen states that the functional ability at the time of discharge from the hospital was so nearly normal in some cases that it was impossible to notice from the walk that there had ever been a fracture of the hip. Nicolaysen recommends this method as routine treatment in fresh cases because of the uncertainty of obtaining union by any other method and because of the length of time and suffering, especially to those past middle age, from treatment by apparatus. In most of his cases Nicolaysen used no anesthetic. It would seem as if the employment of anesthesia in these cases would facilitate the correction of deformity and permit easier handling of the limb by overcoming all muscular resistance. Nicolaysen's method is as follows:

After a thorough cleaning of the trochanteric region of the injured side, the patient is placed on the uninjured hip and a competent assistant, by manipulation and traction, draws the trochanter down into place. The operator directs this procedure until Burow's angle has been enlarged to a right angle. When this position of the trochanter by extension and abduction has been secured, a pointed steel wire nail about 15 cm. in length, starting from $4\frac{1}{2}$ to 5 cm. below the top of the trochanter, is hammered through the neck and through the head of the femur into the acetabulum. Nicolaysen states that there never has been any difficulty in pounding the nail in, and that a characteristic sound is elicited when the nail reaches the acetabulum. The end of the wire nail is covered with antiseptic gauze and a plaster of Paris spica bandage is applied from the toes to above the crest of the ilium. After three or four weeks a hole is cut in the plaster bandages over the wire nail and the nail is removed. It is stated that the nail was invariably found loose at this time. The plaster bandage is removed at the end of eight or ten weeks, but the patient is allowed to be up on crutches for some time previous. Burow's angle, which Nicolaysen refers to frequently and depends so much upon, is a special method of measuring used by him and also by Professor Heirberg of Christiania. By it, as Nicolaysen admits, no more information in regard to the position of the trochanter is obtained than by the application of the well-known Nelaton-Roser line and Bryant's ileo-femoral triangle. He believes it just as accurate, however, and much more readily applied and with much less disturbance to the patient. The angle under discussion is an angle formed at the top of the trochanter by a line from the anterior-superior spine of the ilium and a line from the middle of the crest of the ilium. With the trochanter in normal position, this angle should be a right angle.

A study of Nicolaysen's reported cases shows very successful results with no fatalities. It is noteworthy that the majority of his cases were advanced in years, most of them over sixty and a number between seventy and eighty years of age.

The following conclusions in regard to this form of fracture and its treatment can be made:

1. Fractures entirely intracapsular are very rare.

2. When they do occur and are unimpacted, the obtaining of union by any form of fixation apparatus is exceedingly doubtful.

3. The operation of nailing the fracture with or without open incision is to be adopted whenever possible.

4. In the young and middle-aged, when no contra-indications to operation are present, such as obesity, general debility, marked arteriosclerosis or complicating disease, the method with open incision is more accurate and preferable.

5. In persons of advanced age and those with definite contra-indications to surgical interference, the direct method without incision, as practiced by Nicolaysen, should be used in all cases if seen sufficiently early.

6. In employing the method of Nicolaysen, a general anesthetic should be given.

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A DIETETIC STUDY

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The statement has been so generally made that Americans eat too much, that most of us have resigned ourselves to whatever odium is connected with it and have ceased to try to be abstemious. Some dietetic studies of patients

who have declared that their dietary was about the same as in health and observations of healthy persons, have convinced the writer that this sweeping condemnation is scarcely deserved and that many persons in good circumstances and in fairly good health really ingest considerably less than the older standard ration.

Partly as a matter of convenience and partly because each one of us ought to make practical application of his theoretic knowledge of hygiene, the writer has made an approximate but sufficiently accurate estimate of his own dietary. It may be said that this dietary has been selected from a liberal though not elaborate bill of fare presented at a family hotel; that various circumstances, including a good cook and a good appetite, have tempted to overeating, and that the diet commonly followed was not influenced by scientific knowledge; and that, indeed, until the study was begun, the writer could not have guessed within a 50% error of the weights of the various viands eaten. This diet represents a slight restriction from previous habits of eating, on account of moderate increase of weight, and the only rule followed was the utterly unscientific and even unhygienic one of eating small quantities of plain foods that did not appeal particularly to the palate so as to allow freer indulgence in desserts, etc. It may also be said that, previously to the arithmetical computation, the writer had no idea as to how closely the diet followed the standards, either of the total number of calories or of the proportionate amounts of protein, fat and carbohydrate.

Breakfast

| | Protein | Fat | Carbohydrate |
|--|---------|-----|--------------|
| 1 shredded wheat biscuit, | 4 | 1.8 | 19.2 |
| 100 cc cream, | 3.5 | 20 | 7.5 |
| Total, usually amounting to about 10 gm fruit sugar and negligible amounts of protein and fat. About twice as much as bananas about 10-15 gm or 6 gm protein as 110 of carbohydrate. | | | |
| 2 cups of weak coffee, including 100 cc cream and 6 lumps of sugar, weighing on the average 6 gm each, | 1 | 10 | |
| | 4.5 | 20 | 94.5 |
| A approximate total for breakfast, | 11 | 45 | 72 |

Dinner

| | Protein | Fat | Carbohydrate |
|---|---------|------|--------------|
| Meat, 30 gm, | 6 | 0.4 | 0.4 |
| Beef, mutton, etc., about 10 gm, 3 or 4 times, also bread equals 30 gm. Half of bread will do the same. | 1.5 | 10.5 | 20 |
| Butter, ordinarily, about 10% of food, | | 10 | |
| Potatoes, if always taken, sometimes exchanged for fruit, etc., as 1 lb of bread contains a quantity of food equal to 1 lb of fruit, actual weight 50 gm, | 1 | 10 | 10 |
| Fruit 50 gm, about 30% sugar in preserves, etc., or when sugar is added to fruit. | | 10 | 10 |
| Cake, pudding, etc., or fruit, as 1 lb of fruit, sugar, and starch cake, etc., and that only 5 gm each, | 1.5 | 1 | 20 |
| Cocoa, 200 cc cream, sugar, about 100 cc milk and 18 gm sugar, | 4 | 4 | 25 |
| A approximate total for dinner, | 18 | 36 | 90 |

Dessert

| | Protein | Fat | Carbohydrate |
|--|---------|-----|--------------|
| Simple little cake, as in health, healthful etc., or cake, as in overeating, that is, sugar and fat, | | | 10 |
| Fruit, 25 gm, 10% sugar, 10% starch, etc., used as dessert, or fruit, as 1 lb of fruit, sugar, and starch cake, etc., and that only 5 gm each, | 1 | 10 | 10 |
| Potato, 50 gm, | | 10 | 10 |
| Bread, cream, etc., as 1 lb of bread, etc., and that only 5 gm each, | 1 | 10 | 10 |

DINNER—Continued.

| | Proteid. | Fat. | Carbo- hydrate. |
|--|----------|------|--------------------|
| Six small crackers (average, sometimes exchanged for bread). Weight, 5 gm. each. | 3 | 2.7 | 21 |
| Allowance for butter, gravy, etc., only occasionally used. | | 5 | |
| Dessert (counted as half of ordinary serving of 150 gm. ice cream and 50 gm. cake, usually supplanted by fruit pie, pudding, etc., or fresh fruit. Liberal allowance). | 5 | 13 | 40 |
| Coffee as at breakfast. | 3.5 | 20 | 39.5 |
| Approximate totals for dinner, | 25.5 | 43.5 | 125 |

ADDITIONAL FOOD PER WEEK.

| | Proteid. | Fat. | Carbo- hydrate. |
|--|----------|------|--------------------|
| About 100 gm. of mixed nuts (net weight), 500 gm. candy (a little over a pound). | 20 | 50 | 400 |
| Two additional lunches, estimated same as luncheon. | 36 | 32 | 184 |
| | 56 | 82 | 604 |
| Approximate average additional food daily, | 8 | 12 | 87 |

| | Proteid. | Fat. | Carbo- hydrate. |
|----------------------|----------|-------|--------------------|
| Breakfast, | 11 | 42 | 72 |
| Luncheon, | 18 | 16 | 92 |
| Dinner, | 25.5 | 43.5 | 125 |
| Extras, | 8 | 12 | 87 |
| Average daily total, | 62.5 | 113.5 | 376 |

| | |
|--|-------|
| Calories from proteid ingested, 4.9 x 306.25 — 10% allowed for non-absorption, | 275 |
| Calories from fat ingested, 9.3 x 1046.55 — 10% allowed for non-absorption, | 942 |
| Calories from carbohydrate, 4.1 x 1541.6 — 3% allowed for non-absorption, | 1,495 |
| Total calories, | 2,712 |

The statement made in the beginning of the article that the writer had no idea before making the arithmetical computations how the dietary would correspond with standards, is true in an absolute sense, but it would leave a false impression to allow the implication that a preconceived notion did not exist. As this notion was incorrect in almost every detail, it seems worth while to state it. The writer supposed that, while eating less heartily than previously, and less heartily than many other men and women, he was still considerably above Voit's standard of 118 gm. of proteid, 56 of fat and well up to the standard of 500 gm. of carbohydrate for a man at moderate work. Instead of this, he was very close to the low standard of Chittenden of 0.7 gm. of proteid and 30 calories per kilogram of body weight (about 80 kg. or 176 pounds, height 5 feet 9 inches) for professional men, and actually within Chittenden's standard of 0.8 and 35, respectively, for men at light work.

The writer also supposed that he was eating very little fat, on account of an antipathy to fat meat, and very limited use of gravy and butter. The rather free use of cream explains this discrepancy. It may be worth while to point out that the ordinary small ball or parallelopipedon of butter served at hotels and restaurants weighs about 10 gm. and that two of these are used by the majority of persons. Some persons habitually use 100 gm. or more of butter daily, not to mention fat meat, gravy, etc.

The writer also supposed, as did his friends, that he was using relatively large amounts of carbohydrate, but the inverse relation of the

appetite for sugars and starches was a greater compensating factor than had been supposed. Of the 376 gm. of carbohydrate, 221 were in the form of sugar, and mainly cane sugar. This is considerably in excess of the average, although, in an estimate of the consumption of sugar by about 40 persons, a few years ago, the writer found it to be 130 gm. per capita, less economic waste and plus that contained in candy and fruit outside of meal times. In this connection, it may also be stated that the writer has never been able to demonstrate more than a very doubtful trace of sugar in the urine, after the indulgence in a pound of candy in an evening, after a dinner containing the usual amount of carbohydrates. Generally speaking, the appetite and ability to care for sugars seems to be reciprocal to that for starches and, to a less degree, fats. A consumption of 250 gm. of potato at dinner, containing 50 gm. of starch, is considered a reasonable allowance by many persons, not engaged in hard labor.

A very important basis for clinical dietetic study is the ability to gauge the amount ingested by the eye. Obviously, for metabolism experiments, accurate analyses of the immediate food supply is necessary. But this cannot be done unless the food is specially prepared in homogeneous form. Meats, in particular, must be hashed and thoroughly mixed. Even in some metabolism experiments, this precaution has not been followed, but similar slices of bread, meat, etc., have been cut and analyzed. For ordinary clinical use, the error arising from the reliance upon accurate average tables of composition of food is probably less than would occur from the attempt to analyze "similar" samples of viands not reduced to a state of homogeneity, and, certainly, is sufficiently accurate for practical purposes when the variety of diet is not restricted to a very marked degree. The individual errors, indeed, tend to neutralize one another.

The writer knows of no royal road to a knowledge of the weights of food substances. Actual weighing is the only means of accomplishing the end. Many ingredients of the diet occur in the form of units which do not vary much from an average. For instance, ordinary lumps of sugar average 6 gm.; small round "Jersey" crackers, 5 gm.; standard soda crackers, 23 gm.; a fair-sized lamb chop weighs 60 gm. gross; the round muscle 20 gm., and other available muscle 10 gm. An ordinary cut of prime rib roast of beef with the bone removed, weighs about 25 gm. and two of these are equivalent to an ordinary serving of almost any meat. Much larger portions are served *à la carte* at first-rate restaurants. Shredded wheat biscuit, the ordinary serving of other cereals, an ordinary slice of bread and the half of a hard roll amount to 30 gm. each. When it is necessary to keep close account of the nutrition of a patient, it is well to reserve for him a loaf of bread, a special sugar bowl, a package of cereal, etc., and to obtain the amount used in a certain period by subtraction.

Clinical Department.

AN EXPERIENCE WITH CASCARA.

BY RICHARD F. CHASE, M.D., BOSTON.

IN a recent case of gastric ulcer I prescribed Ext. Cascara Sag. Fl. (P. D. & Co.), directing the patient to take 15 to 20 drops before each meal and to diminish the dose as the bowels became regulated. At the next visit the patient reported that the medicine had not materially influenced the actions of the bowels, that even teaspoonful doses had caused only slight evacuations, moreover, she said the medicine was not as bitter as I had given her to understand. My suspicions were aroused as to the product she was using, so requested her to bring to me the bottle and its remaining contents. On its receipt, I at once discovered by the taste and odor that the preparation was not the one I had prescribed. I had the same prescription filled at another druggist's and the desired result was obtained. Assuring myself in so far as possible, that substitution had been practiced in the case of the original prescription, I wrote the pharmacist accusing him of substitution. He at once denied the accusation and brought to my office the stock bottle from which the prescription had been filled. The bottle bore the proper label, but by comparing its contents with samples of the true product the druggist was soon convinced that something was wrong. Assuring him that his preparation was practically an inert one he left the bottle with me.

With the assistance of a representative of P. D. & Co., it was discovered by the number on the label, that the bottle of fluid extract of cascara had been put up by his firm in 1888, eighteen years previously. What preparation of cascara the bottle contained at this time could not be learned, but as cascara does not deteriorate with age, as I understand, the most natural conclusion is that sometime in the past another than the original product had been poured into the bottle. The mutual understanding between the druggist and me is that he unintentionally substituted.

This experience explains how in an unusual way an inferior product may be substituted for a good preparation.

My experience with and confidence in the preparation prescribed has led me twice in the past two years to the detection of practically worthless preparations of cascara. I have often heard physicians state that they do not obtain results with this drug (that many more that they do); the reason I have found at times is that either a good fluid extract was not used or else the drug was not properly administered. In the cases in which a laxative is indicated and the number is far less than is generally supposed if other measures are properly carried out, I have found no drug so generally beneficial as a good fluid extract of cascara, when given in small doses three times a day before meals. The same amount given in less frequent doses will not produce the same results.

Medical Progress.

REPORT ON THE PROGRESS OF SURGERY.

BY HERBERT E. BURRILL, M.D., BOSTON, AND H. W. CUSHING, M.D., BOSTON.

(Continued from No. 18, p. 500.)

THE MANAGEMENT OF CERTAIN CRITICAL CASES OF INTESTINAL OBSTRUCTION, WITH REPORT OF CASES.

JOHN W. ELLIOT,¹⁰ in a very interesting paper on this subject, read before the American Surgical Association in July, 1905, gives the following summary:

(1) We find the prevalent method of enterectomy with immediate suture in cases of intestinal obstruction attended with a high mortality, due to the changed condition of the distended bowel.

(2) Enterostomy with later enterectomy is to be reserved for the cases unable to bear primary enterectomy.

(3) Enterectomy with a temporary artificial anus should be the operation of choice in all critical cases of intestinal obstruction, where there is an opportunity for resection, whether it involves the large or the small intestine.

(4) The suggested improvements in the technique are as follows:

The upper distended bowel should not be opened until the peritoneal cavity is completely closed. (This is already the practice of several surgeons.)

The open ends of the bowel should be stitched together on their mesenteric side before they are fastened into the parietal wound. This will greatly facilitate the later closing of the artificial anus.

When the artificial anus is in the small intestine, the partially digested discharge from the upper opening should be collected and injected into the efferent opening.

(5) The closing of the artificial anus is a safe operation, and hardly disturbs the convalescence.

(6) Up to the present time not enough cases have been done by this method to estimate its relative mortality, but the cases here reported with those referred to suggest the probability of better results than have been obtained by enterectomy with immediate suture.

THE TREATMENT OF DIFFUSE SUPPURATIVE PERITONITIS.

Le Conte¹¹ after a brief experience with the method advocated by Murphy in the treatment of diffuse peritonitis is impressed with its value. He states that Murphy's technique may be ranged under six headings, as follows:

(1) The rapid elimination of the contents of the peritoneum, whether it be a perforation of the bowel, a cecocolic appendix, a ruptured peptic ulcer, etc. This must be done in the least possible handling of the peritoneal cavity.

(2) Drainage by tube of the lower portion

¹⁰ *Ann. of Surgery*, N. Y., vol. 41, p. 100, 1905.
¹¹ *Ibid.*, February, 1906, p. 211.

of the pelvis through a suprapubic opening, and free drainage through the operative incision.

"(3) The elimination of all time-consuming procedures at the time of the operation.

"(4) The semi-sitting position of the patient after operation, the so-called Fowler posture.

"(5) The absorption of large quantities of water through the rectum, which reverses the current in the lymphatics of the peritoneum, making the surface of that membrane a secreting instead of an absorbing one, and also markedly increasing the secretion of urine.

"(6) The prevention of peristaltic movements of the intestines by withholding all food or liquids by mouth, and, perhaps, by the administration of opium."

AN EXPERIMENTAL STUDY OF THE LOCAL EFFECTS OF PERITONEAL DRAINAGE.

Dr. John L. Yates¹² has contributed a valuable article, to which was accorded the Senn medal in 1905, by the Surgical Section of the American Medical Association. The conclusions that he reaches are of interest and are as follows:

Drainage of the general peritoneal cavity is physically and physiologically impossible.

The relative encapsulation of the drain is immediate.

The absolute encapsulation occurs early (less than six hours in dogs), and can be retarded, but not prevented.

The serous external discharge is an exudate due to the irritation of contiguous peritoneum by the drain.

There is a similar inward current from the potential into the general cavity.

This external exudate diminishes remarkably with the formation of encapsulating adhesions.

These adhesions, under approximately normal conditions, form about any foreign body.

Their extent and density depend on the degree and the duration of the irritation of this body.

Primarily fibrinous, these adhesions become organized in a few days (three days in dogs).

If the irritation persists, they become progressively more mature fibrous tissue.

After irritation ceases, their disappearance depends principally upon a mechanical factor,—the ability of the involved surfaces to pull themselves or to be pulled loose.

Drains should be the least irritating, and should be gradually and finally removed as soon as possible.

Irrigation through drains is futile to prevent adhesions, and dangerous.

After a drain is inserted, all intra-abdominal movements should be reduced to a minimum.

As soon as the drain is removed, intra-abdominal activity should be stimulated, to aid in the disappearance of the remaining adhesions.

Peritonitis, if not too severe, possibly aids in the rapidity of the encapsulation of the drain.

A drain in the presence of infection is deleterious to peritoneal resistance, and should only be introduced to exclude more malign influences.

Postural methods, unless destined to facilitate encapsulation, are both futile and harmful, as far as drainage is concerned.

Peritoneal drainage must be local, and unless there is something to be gained by rendering an area extraperitoneal or by making from such an area a safe path of least resistance leading outside the body, there is, aside from hemostasis, no justification for its use.

SUBPHRENIC ABSCESS.

F. Perutz,¹³ in an exhaustive article on this subject, has reviewed 158 different articles on the same subject. He has collected 214 cases. Inflammatory processes in the neighborhood of the stomach and appendix are the most frequent cause of a subphrenic abscess. The symptoms may be either acute or very insidiously chronic in character. Usually the organs in the vicinity are pushed forward and outward as the fluid collects beneath the diaphragm. There is limitation of movement of the side of the thorax which is in contact with the effusion, and not infrequently extension of the inflammation through the diaphragm constituting, when gas is present, a subphrenic pyopneumothorax. This extension to the pleura is accounted for by the extensive lymphatic communication between the two places.

THE SURGICAL TREATMENT OF TUBERCULOUS GLANDS IN THE MESENTERY.

This very interesting subject has not received the attention which it demands. Corner¹⁴ states: "Tuberculosis of mesenteric glands is found most frequently in adults affecting the lymphatic glands which drain the appendix or the ileo-cecal region. Though I have no intention of quoting specific examples, this class of cases must be referred to. In my lectures delivered at the Royal College of Surgeons of England in 1904, it was pointed out that the cecum was the second place of rest for food in the alimentary canal, the stomach being the first. Moreover, the cecum is the situation which a hundred- or thousand-fold contains more micro-organisms than any other part of the intestinal tract. These two points, the delay in the passage of food and the presence of organisms, lead to the presence of lymphoid tissue in the cecal region as a protective measure, and of its inflammation, appendicitis. Thus there are three reasons why the lymphatic glands in this situation should be those most frequently affected; namely, the delay in the passage of the food material, the presence of organisms, and the presence of inflammation. In operating on the appendix enlarged glands have been frequently found, either in the mesenterium itself or at the ileo-cecal junction, which have turned out to be caseous or partially cretified. It is a most curious fact that suppuration is very uncommon in the mesenteric glands. Even in a septic disease like acute appendicitis with abscess, suppuration is exceedingly rarely

¹³ Centralblatt f. d. Grenzgebiete d. Med. u. Chir., Jena, vol. viii, No. 10.

¹⁴ The Lancet, Dec. 23, 1905, p. 1825.

¹² Surgery, Gynecology, and Obstetrics, December, 1905.

seen. The most probable explanation seems to be that the abdominal lymphatic glands which drain the intestinal tract become tolerant and inured to the products of bacterial action, so that they are very rarely excited to the pitch of suppuration."

Mr. Corner then gives the histories of four cases of tuberculous glands of the mesentery where he operated. He considers that there is a very close relationship between tuberculous peritonitis and tuberculous of the mesentery glands. The tuberculous mesenteric glands are the result, as he clearly states, of tuberculous enteritis, not of peritonitis.

THE REVERSAL OF THE CIRCULATION IN A LIMB.

Carrel and Guthrie, from the Hull Physiological Laboratory, University of Chicago,¹³ contribute a very interesting study. The object of this experimentation is given as follows:

"These experiments have been undertaken with the view, both physiological and surgical, of studying the changes of the circulation of the limb after reversal; and of finding a method of preventing gangrene, when the arteries of a limb become unable to carry the red blood to the capillaries."

The writers state: "The reversion may be brought about by cutting the main artery and vein of a limb and uniting the central end of the artery to the peripheral end of the vein and the peripheral end of the artery to the central end of the vein. Then, from a functional point of view, the vein becomes an artery, and the artery a vein. The capillary circulation is also reversed."

Experiments were done on dogs and the writers state that they demonstrate that:

"(a) The valves present, at first, the reversion of the circulation in the veins

"(b) After a short time, the valves gradually give way and the red blood flows through the veins as far as the capillaries

"(c) Finally, it passes through the capillaries, and the arteries are filled with dark blood. Probably dark blood returns from the capillaries towards the heart through some veins.

"(d) Practically complete reversal of the circulation is established about three hours after the operation"

Their conclusions are as follows:

"(1) The reversal of the circulation in a limb of a dog is possible.

"(2) It can be established by an end-to-end arteriovenous anastomosis.

"(3) Under the same conditions, the lateral anastomosis does not establish the reversal of the circulation.

"The permanent results of these operations—a series of which are being performed under aseptic technique in this laboratory—will be published later. If normal nutrition of the limb were possible, and the results of the end-to-end anastomosis permanent, the operation would, perhaps, be proposed for the preventive treatment of gangrene following obliteration of the arteries."

ON PRESERVATION OF THE NERVE SUPPLY TO THE BROW, IN THE OPERATIVE APPROACH TO THE GASSERIAN GANGLION.

The paralysis of the occipito-frontalis muscle due to the severance of the upper twig of the facial nerve constitutes a deformity following the incisions that are necessary to expose and remove a gasserian ganglion. Dr. Harvey Cushing¹⁴ has recognized that it would be desirable, if possible, to avoid this deformity. He states: "In my last five operations I have again turned my attention to the question of preserving this nerve, and have found, contrary to my expectations, that the incision and approach to the skull could be so altered as to avoid injuring it without adding particular difficulties to, or modifying in any great respect, the subsequent steps of the operation. Four of these cases have been total extirpations for major neuralgia; in the fifth I had to be satisfied with simple division of the sensory root of the trigeminus, a case in which an inoperable sarcoma had grown up through the base of the skull under the ganglion, causing severe trigeminal pain. The malignant nature of the disease from which this patient was suffering rendered the question of cosmetic result far less important than in the neuralgia cases; and consequently the zygomatic arch was not removed, but in other respects the method of approaching the ganglion has been the same in each of the five cases." He gives photographs of one of his patients.

The operation he states is as follows: "The incision has been made within the hair margin, not for the purpose of concealing the scar, because these cicatrices are almost invisible after the operation, but, as has been stated, in order to avoid division of the nerve. The posterior limb of the incision is carried down to the zygoma over the temporal vessels, which usually must be ligated. The skin flap is then reflected downward and forward by blunt dissection, the handle of the scalpel sufficing for this purpose. The temporal fascia, thus exposed, is incised in a line concentric with the skin incision and likewise reflected. The zygoma, which has thus been brought into view at the lower angle of the wound, is then shelled out of its periosteal sheath, not as formerly described by making an incision along its external surface, but by crowding forward its coverings *en masse*. The exposed fibers of the temporal may then be divided as usual by a horseshoe-shaped incision and the muscle scraped away with a periosteal elevator as far down as the base of the skull. In order to satisfactorily expose the skull, a little deeper retraction of the flap is necessary than by the older method, the ordinary small appendix retractor being used for the purpose of holding down the cutaneous and fascial part of the flap as well as the muscle. From this point on the operation is conducted as heretofore described."

This is one of the refinements in technique that are so necessary to secure the best results from operative procedure.

¹³ *Annals of Surgery*, February, 1906, p. 203.

¹⁴ *Annals of Surgery*, January, 1906, p. 10.

A NEW METHOD OF EXCISION OF THE KNEE WITHOUT OPENING THE JOINT.

Flint¹⁷ recognizes that tuberculous material smeared over the surface of the wound is a source of danger from secondary infection. He has planned an operation which he believes has certain advantages. It is as follows:

"The skin incision should be rectangular, the two vertical cuts being well back at the sides of the leg, extending from a little above the level of the upper limit of the subcutaneous bursa to one inch below the joint line. These two vertical incisions are connected across the front of the tibia by a transverse incision. This rectangular skin flap with the subcutaneous tissue is reflected upward.

"The next incision is curved, the concavity upward. It starts in the vastus internus a little above the upper limit of the subcutaneous bursa and is carried down and outward in the direction of the muscle fibres to the tendons of the quadriceps extensor one-half inch above the patella, and from here upward and outward in the direction of the fibers of the vastus externus to a point corresponding to the beginning on the inner side. The muscle with the tendon is completely divided and burned upward, thus exposing to view the subcutaneous bursa. We next make two small incisions on either side of the femur, starting on each side of the patella in the incision just described, and carried downward and backward to the joint line. The one on the inner side divides the tendinous expansion of the quadriceps, the one on the outer side the tendinous expansion and part of the iliotibial band. After completing these incisions the subcutaneous bursa is separated from the femur with the knife and turned down, tilting the patella when not adherent. The last incision in front is carried transversely across the front of the tibia down to bone just below the joint line.

"On the inner side the sartorius and gracilis are pushed back: on the outer side the biceps and peroneal nerve.

"A flat retractor about one inch wide is now introduced on the inner side behind the head of the tibia close to the joint line. It is first introduced vertically between the gracilis and sartorius on one side, and the tibia on the other. These muscles are pried off and the retractor brought to a horizontal plane, the apex passing behind the tibia. This retractor is now pushed outward, always close to the bone until it emerges at the outer side. All soft parts are thus held back.

"The next step is to saw through the tibia as close to the joint as circumference seems to warrant, the leg being still flat on the table; the retractor being in place protects the soft parts.

"The saw-cut through the head of the tibia is used as a joint. The femur is flexed on the body, the leg on the femur, and with a large knife the soft parts are quickly separated from the posterior structures of the joint. By a little downward traction on the leg, combined with the pull of its own weight, injury to the vessels is easily avoided.

This seems to be much more easily accomplished in this manner than by the operation which attacks the posterior structures of the joint from the anterior aspect. One has at least a better sense of security because one is perfectly sure of the relation of the vessels to the knife.

"As soon as the posterior region of the condyles is exposed the femur is sawn through from behind forward and slightly downward at a level sufficient to clear the cartilage behind. This saw-cut is carried forward until it reaches the margin of the cartilage on the anterior surface of the femur, and the saw then withdrawn. The direction of this cut should be downward and forward so as to lose as little as possible of the femur and obtain the desired slightly flexed position of the bones subsequently. It is easy to be deceived as to the exact position of the cartilage behind. One's examination should be particularly careful at this stage of the operation, otherwise the saw-cut in the femur will be too high up.

"After withdrawing the saw from the femur the leg is once more placed in a horizontal position. The saw is introduced behind the subcutaneous bursa at the upper margin of the articular cartilage on the front of the femur and a cut made which will meet the anterior limit of the horizontal saw-cut made from behind. This last cut is almost vertical, in the coronal plane, and allows the articular portion of the femur, which extends upward in front, to be removed with the joint.

"This is the last step of the incision proper, for it is now possible to lift out the joint with the patella and subcutaneous bursa, the articular surfaces of femur and tibia, all complete without having opened the joint. Up to this point a tourniquet is used, but inasmuch as this part of the operation takes but little time, in fact about ten minutes, and, in easy cases, six minutes, we do not see the disadvantageous effects of longer use, such as would be necessary to obtain complete hemostasis in an operation which opens the joint transversely or dissects off the structures little by little. On removal of the tourniquet the bleeding points can be quickly clamped and tied, thereby reducing hemorrhage to a minimum.

"The subsequent steps of the operation differ in no way from those hitherto customary."

A STUDY OF INFECTION OF THE KNEE JOINT BASED UPON AN ANALYSIS OF 310 CASES.

Carleton P. Flint, in an article on this subject,¹⁸ summarizes as follows:

Non-penetrating injuries, penetrating injuries, traumatic or operative, and knees independent of any injury in the course of some other infectious process or not, may present signs and symptoms not to be distinguished in the absence of bacteriological examination from the cardinal signs and symptoms of infection.

Certain of these cases are undoubtedly infected, but the data at our command do not allow us to distinguish these from such as may be due to

¹⁷ Annals of Surgery, March, 1906, p. 426.

¹⁸ Annals of Surgery, October, 1905, p. 570.

trauma and those possibly due to toxins secondary to infection elsewhere.

The knee joint has certain germicidal powers.

One out of every 22 operations upon clean knees becomes sufficiently infected to demand operation (4.5%).

One out of every 9 operations for recent (five days) traumatic non-penetrating injury becomes sufficiently infected to demand operation (11%).

One out of every 35 operations for pathological conditions other than traumatic injuries more than five days old becomes sufficiently infected to demand operation and draining the joint (2.9%).

One out of every 22 operations for simple fracture of the patella becomes sufficiently infected to demand operation (4.5%).

One out of every 71 operations for fracture of the patella done after the fifth day becomes sufficiently infected to demand operation (1.2%).

One out of every 9 to 10 operations for fracture of the patella done before the fifth day becomes sufficiently infected to demand operation (10.5%).

Three out of every 5 cases of penetrating injury to the knee joint become sufficiently infected to demand operation (60%).

Of compound fractures of the patella, 7 out of 9 become sufficiently infected to demand operation (78%).

Certain knees subjected to non-penetrating injury and not operated become sufficiently infected to demand operation (10% of the operated septic cases).

Certain knees become sufficiently infected to demand operation where no history of trauma exists or other evident septic focus in the body (13% of the operated septic cases).

Certain knees become sufficiently infected to demand opening and draining the joint in the course of some evident focus of infection elsewhere in the body (11% of the operated septic cases).

One out of every 9 infected knees which have been opened and drained dies (11%, some after previous amputation).

One out of every 15 infected knees which have been opened and drained comes to amputation before recovery (6.6%).

One out of every 31 infected knees which have been opened and drained is resected (3.2%).

Most knee joints which have been infected, opened, drained and recovered show varying degrees of functional disability, from slight limitation of motion to complete ankylosis with or without subluxation.

The average stay in the hospital of an operated infected knee joint is between two and three months.

When it is once determined to open and drain a knee joint, the operation should be as radical as possible at the start.

The position of the leg should be that giving the best mechanical drainage, i. e. the patient should be face down.

The risk of infection is greatest in penetrating wounds of the knee (60%).

The risk of infection is least in operations upon clean knees and where there has been no recent trauma (3 to 4%).

SURGICAL TREATMENT OF INTRASPINAL TUMORS.

Richard H. Harte¹⁹ reviewed the literature of this very interesting subject and reports two cases, one a paraplegia from Pott's disease, in which laminectomy was done with great improvement; the second case, a dermoid cyst of the spinal canal with operation and recovery. He has found 87 cases in which the situation of the tumor in reference to the dura is stated. Fifty of these were extradural and 36 intradural. The average duration of the symptoms before operation was two years to three months. In 6 cases the symptoms had existed for periods varying from four to eighteen years. The writer gives an excellent account of the technique of the operation.

INTRAPLEURAL LIPOMA, ACUTE PERICARDITIS, PERICARDIAL EXPLORATION.

R. H. Fitz²⁰ has called attention to this condition which must be rare. He reports a case of subpleural lipoma which was more or less the shape of a pear, the small extremity being attached most firmly to the external surface of the pericardial sac along a line extending from the anterior mediastinum in the region of the pulmonary artery (where it seemed to be continuous with the fat tissue of the pericardium) downward on the left side toward the posterior mediastinum. The mass of fat tissue appeared to be covered in places by a thin, shiny layer resembling the pleura. The condition was confounded with an exudative pericarditis.

The pericardium was tapped in the fifth interspace near the left border of the sternum, and again in the left fourth interspace some two inches from the sternal edge. The cannula entered at least one and one-half inches in each place. Later an exploratory trocar and cannula were inserted through the sixth left interspace in the axillary line. The instrument entered two or three inches, the tip was moved freely, but no fluid escaped. A bit of tissue removed by the cannula was found on microscopic examination to consist of fat. Other cases of intrapleural lipoma are referred to.

Fitz recommends that operation be carried out through the left xiphocostal space, and that if aspiration is not successful incision should be used since it gives ample room for resection of the costal cartilage if necessary, is free from risk to the pleura and peritoneum, and enables injury of the internal mammary vessels to be avoided or controlled. In critical cases when aspiration causes no outflow of fluid and the tip of the instrument can be moved about within the pericardium, exploratory incisions should speedily follow.

¹⁹ *Annals of Surgery*, October, 1905, p. 524.

²⁰ *American Journal of the Medical Sciences*, November, 1905, p. 785.

SURVIVALS AFTER INTERSCAPULO-THORACIC AMPUTATION.

Jeanbrau and Riche²¹ have analyzed the records of the mortality of this operation for malignant growths and state that since 1887 the mortality has dropped from 29.16% to 7.84%. Patients usually survived three years. The number of cases where the diagnosis was established histologically is 125; absolute cure has occurred in 24 cases where patients have lived more than five years.

FRACTURES OF THE OLECRANON TREATED BY SUBCUTANEOUS EXARTICULAR WIRING.

Murphy²² states: "Considering that coaptation of fragments in fractures of the olecranon is not easily obtained by manipulation, the maintenance of the fragments is frequently an impossibility, and the treatment by splints or casts is frequently followed by ankylosis or impairment of motion. I have come to the conclusion that operative treatment is the most advisable. On the other hand, the exposure of the elbow joint appears to me to be dangerous. The open treatment that Lord Lister applied to fractures of the patella, and which is practiced to a great extent to-day in England, does not appeal to me in the case of fractures of the olecranon. I have always feared to open a joint, even under the greatest aseptic precautions, for we all know that the liabilities of infections in a joint are greater than those in the peritoneum. Therefore, the subcutaneous and exarticular wiring of the olecranon seemed to me the most advisable and the simplest procedure. As far as I have been able to learn from the literature, subcutaneous wiring of the olecranon has not been resorted to by any one else. It is such a simple and practical procedure that I have felt that its publication might be beneficial to the general practitioner and surgeon, who undoubtedly have had unpleasant experiences with such fractures."

The operation is apparently an effective one, but we cannot agree with the conclusions reached by the writer for we never have seen an instance of any marked disability following a fracture of the olecranon.

A NEW METHOD OF ARTHROTOMY FOR OLD DISLOCATIONS OF THE SHOULDER, BASED ON EXPERIENCE IN THE RADICAL BREAST REMOVAL.

E. Wyllys Andrews,²³ in an article on this subject, gives the steps of the arthrotomy as follows:

(1) Incision from clavicle downward across front of shoulder into axilla. The cut is large, 50% longer than by the older methods. Never trust a short incision here.

(2) Section of the pectoralis major near its insertion, leaving about one centimeter attached to bone. This muscle, being cut transversely, is laid over with the skin flap, thus exposing the axillary vein and brachial plexus. The pectoralis

minor is not cut, unless the head of the humerus and vessels have been forced under it.

(3) Careful examination of the vessels, if they cross the tuberosity or head of the humerus, is now made. The artery cannot readily be seen, except by drawing aside the vein. On account of this deep position, it is more often involved in the adhesions, and has been the vessel usually torn. Great care and plenty of time are needed to separate these vessels when they or their large branches, *e. g.*, subscapular or circumflex, are found adherent. No efforts at reduction should be made until the vessels and large nerve trunks are isolated and pulled aside. Bear in mind that some of the reported injuries of the vessels are due to projecting fragments or spicula on the humerus.

(4) The forearm should now be flexed on the arm as a lever, and an assistant should rotate, inward and outward, with a rocking motion, and make traction, when the fibers of the adhesions will be seen and heard to tear gradually, so that the range of motion increases. The operator, while this is going on, should clear the socket of any granulations and cut and nick such bands as refuse to yield after hard stretching. He should search for the lumen of the shrunken capsule. The head and glenoid cavity soon approach each other, the operator tilting the scapula towards the head of the humerus, and giving directions simultaneously as to flexing, extending, abducting, and rotating the limb, as he sees fit. At the last moment the head is apt to take a subglenoid position and refuse to ride over the lower rim of the socket. Before cutting the ligaments or sclerosed muscles more widely, as one is tempted to do, if a blunt hook or retractor be made to pull the upper end of the humerus straight away from the body, the head can sometimes be dragged over the lip of the socket by a smart pull at the critical turn of the manipulation.

(5) The pectoralis major, and, if cut, the minor, should now be reunited by the Harris tendon suture method, and the skin closed with separate suture. Drainage should rarely be dispensed with. This operation is invariably a bloody one, if the dislocation is of long standing and the adhesions firm. Good drainage for a few days prevents infection, which can easily take place with large joint surfaces bathed in wound secretion.

His conclusions are as follows:

(1) It must be considered established that great force is never justifiable in old shoulder dislocations.

(2) Few cases can be left unreduced, on account of pain and pressure symptoms on the brachial plexus.

(3) Resection is more satisfactory, but not ideal or wholly safe.

(4) Arthrotomy by the old incisions is tedious, and never has been widely practiced, but has shown good results.

(5) Arthrotomy by the author's method is simplified and made quicker, as well as safer; it would possibly be as safe as resection, and much more ideal in results.

²¹ *Revue de Chirurgie*, xxvi, No. 8.

²² *Journal of the American Medical Association*, Jan. 27, 1906, p. 257.

²³ *Surgery, Gynecology, and Obstetrics*, November, 1905, p. 385.

Reports of Societies.

THE SOCIETY OF CLINICAL SURGERY.

The sixth meeting of the Society of Clinical Surgery was held in Baltimore on April 13 and 14, and proved as interesting as any of its predecessors. All of these meetings have been remarkably successful, owing largely to the novel methods pursued; and members have come to feel that the results attained and the information conveyed are more striking and important than in the case with any other surgical meetings which they attend. After an experience of three years, it is to be hoped that organizations with similar purposes and methods may multiply. It is not only that men come to learn intimately and at first-hand the accomplishments of their associates, but there is established a familiarity and a delightful give-and-take relationship which adds greatly to the enjoyment of such professional gatherings.

Members met at the Hotel Belvedere and proceeded at once to the Johns Hopkins Hospital where they gathered in the Gynecological Operating room.

Dr. H. A. KELLY, by invitation, opened the proceedings by performing his operation for suspension of movable kidney, approaching the organ posteriorly through the superior lumbar triangle. He anchors the kidney low without displacing it through the abdominal wall, passing one stitch about the twelfth rib and securing the kidney further by three additional stitches. He does not split the capsule. Dr. Kelly then discussed renal prosthesis and referred especially to certain vague points, not immediately referable to the kidney, of which patients complain, pain suggesting appendicitis, lumbar aches, or inguinal hernia. If the kidney be suspected, the diagnosis is made sure by injecting a sterile fluid through the ureter into the renal pelvis, when promptly the patient will exclaim "That's the old pain." Dr. Kelly demonstrated this maneuver successfully on a patient before the Society, illustrating by artificial hydroureteritis the condition actually present.

Mr. MAX BLOOMER, by invitation, then gave an extremely interesting address, with sketches and illustrations, on the development of the kidney, dwelling especially upon the arrangement of the calyces and their relation to the renal pelvis, blood supply, and ureter.

Members then adjourned to the general operating rooms of the hospital where Dr. HARVEY CUSHING showed an infant, operated upon five days previously for craniotomy for birth pressure paralysis, from subdural hemorrhage. Improvement was already evident and the wound was healed. Dr. Cushing pointed out that these cerebral lesions from hemorrhage at birth are probably far more common than is supposed, and that even with absorption of the clot, and partial or complete subsidence of the paralysis, a cyst or scar may remain giving rise subsequently to focal epilepsy. Dr. Cushing also showed a number of patients illustrating admirably the good results obtained by his present method of removing the Gasserian ganglion. He spoke also of his operation for decompression, removing a large bone tumor from brain, emphasizing the point secured when the tumor is not benevolently. He then operated upon an adult patient, thus giving of Jacksonian epilepsy.

Dr. J. V. BLOOMER then demonstrated a case of double inguinal hernia his present method of treating that condition, consisting especially upon the simplicity of his technique, with nontransplantation of the cord and the use of the internal oblique muscle

instead of the rectus for closing in large hernial openings. Dr. Bloodgood then showed a large series of interesting cases demonstrating successful end-results, giant cell sarcoma, enucleated from the tibia three years ago, the patient now well and walking about; a case of giant cell sarcoma removed from the radius by resection of the growth one year ago, the patient now well with a useful hand and arm; a case similar to the tibia case, well twelve years after operation; a patient illustrating a good result after Finney's pyloroplasty; a case of gastric disease presented for diagnosis, the long-standing symptoms having suggested ulcer with pyloric obstruction, the patient being now well after one week of medical treatment; a case of dislocation and fracture of the internal condyle of the humerus with an excellent result after partial resection; a case of cancer high in the rectum, now well, nine months after removal of the growth through the abdomen; a case of Pan's disease with very large spleen, now well nine months after exposing and packing the spleen; a case of bone cyst of the humerus cured by curetting and drainage; two cases of cancer of the breast, both well fourteen years after removal of the tumors, and another similar case well after five years; a case operated upon for the rare condition, double thyroid cyst, now well; a child vigorous and well after the operative and fresh air treatment for tuberculous peritonitis.

Dr. J. M. T. FINNEY then showed an extremely interesting case, a vigorous man of seventy, the victim for some months of aneurism of the right subclavian artery. Dr. Finney had operated upon the man three months previously, tying the innominate which was involved, and tying the subclavian beyond the aneurism. The man now appears perfectly well with good use of his arm. Dr. Finney also showed a case of fracture of the lower end of the humerus from which he had been obliged to excise fragments just above the joint. Function was excellent. Dr. Finney then operated for cancer of the sigmoid flexure without apparent metastasis.

After lunching in the Surgical Building, members repaired to the Laboratory of Surgical Pathology where Dr. Bloodgood gave an interesting demonstration of his methods of teaching surgical pathology, and dwelt especially upon the nature and results of operating in case of various forms of tumor. Members then met in the Anatomical Laboratory where Dr. R. G. HARRISON, by invitation, gave a demonstration of his method of the study of experimental embryology, showing how the young embryos of certain animals may be grafted and partially transplanted in a variety of ways. He spoke especially of the method of transplanting the limbs and torso from one piece of frog's embryo to another, and showed a specimen of the developed hybrid tadpole, and frogs. This demonstration, in addition to the experience of practical surgeons, was a truly extremely suggestive lecture, as well known to our bodies as to the same to open up new avenues of research and point to the solution of many obscure problems.

Dr. S. S. SUTHERLAND, of half an hour, then showed the after-effects of the removal of a large cancer of the rectum and sigmoid, together with a large cystic structure in the urinary bladder, the case of

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which had been operated upon in his service, with seven deaths; and he called attention to the fact that about 13% of these enlarged prostates are malignant. In nearly all cases he advocates operation by the perineal route, according to his well-known method, and in order to distinguish malignant cases he made the following points in diagnosis: early and persistent induration, rapidity of development, small size of the growth, infrequency of hematuria until late, the constant and somewhat indefinite pain which may be in the hips or sacral region, and the early involvement of the seminal vesicles. These symptoms, combined with examination by the cystoscope, will establish the diagnosis. The speaker then spoke of his perineal operation for removal of the malignant prostate: rectangular incision, section of the bulbous urethra and freeing of the prostate with the vessels and trigone, removal of the whole invaded area, anterior to the urethral openings, closure of the bladder wound and reuniting of one angle of the bladder wound with the distal urethral stump. This description was illustrated with admirable drawings. Dr. Young then conducted the Society to his operating room where he performed for them in a brilliant manner the operation of perineal prostatectomy for non-malignant disease.

Members then adjourned to the Anatomical Building where Dr. FLORENCE SABIN (by invitation) gave an interesting address on the development of the Lymphatic System, showing how she began work by using young pig embryos, injecting aniline blue beneath the skin. The earliest development of lymphatics was in the region of the hip and the next in the neck. Later the lymphatics, which are true vessels and not mere tissue spaces, spread over the body radiating especially from a deep sac in the neck which Dr. Sabin has named the Lymph Heart. The speaker showed a number of illuminating preparations and corrosion, showing how the lymph vessels follow the course of the veins especially and form the thoracic duct. She also spoke of the formation of lymph nodes from the lymph heart, as well as in other parts of the anatomy.

Dr. JOSEPH ERLANGER (by invitation) then addressed the Society describing the condition known as heart-block, and its relation to Stokes-Adams disease, illustrating the condition by producing artificial heart-block on the dog. Dr. W. H. HOWELL (by invitation) in the Physiological Laboratory, then demonstrated on the dog the heart, isolated by the method of Martin, Porter and others, with its nutrition maintained through irrigation of the coronary arteries with Ringer's solution; and he showed the action of the accelerator nerves on such a heart, which by these processes may be revived and stimulated to a normal rhythmicity several hours after death.

Dr. W. H. WELCH (by invitation) then favored the Society with a delightful address dealing with certain problems of immunity, and their relation to surgical operations. He prefaced his remarks by showing and commenting upon three interesting microscopic specimens; an appendix enlarged through excessive connective tissue thickening, suggesting a new growth, but without involvement of the mucosa; tissue sections containing numerous examples of the *Spiracheta pallida* of syphilis, abounding especially in the sweat glands, and two interesting specimens from Ehrlich's Laboratory, illustrating mouse cancer undergoing transformation into sarcoma. Speaking of surgical operations in disease Dr. Welch further took as his text the fact that when we operate we deal generally with abnormal conditions against which the normal physiological processes of the organism are already striving, so that we have as our allies these

natural processes, inflammations and the like, our effort being to remove the source of disease and trust to nature to combat and remove its secondary manifestations. Nature has a perfect mechanism for dealing with physiological problems; her method of dealing with pathological problems is imperfect.

After lunching in the Physiological Building the Society visited the Hunterian Laboratory where Dr. W. HALSTED (by invitation) demonstrated on dogs his suggestive experiments for the partial occlusion of arteries by metallic bands, noting how these bands constrict the vessels, burying themselves in the adventitia but not necessarily damaging seriously the nutrition of the distal parts. Dr. Halsted also showed a method of performing end-to-end intestinal suture, a modification of Maunsel's method, but obtaining his traction by sutures passed through the wall of the gut instead of by lateral section and opening of the gut.

Dr. HARVEY CUSHING then gave a demonstration of his methods of teaching students in surgery through practice in operative technique and operations upon dogs. Among other interesting details of this animal clinic he showed how two of his students, Mr. Heuer and Miss Henry, were producing experimental cardiac valvular lesions, and demonstrated dogs in whom such lesions had been produced.

The Society then adjourned to meet in Philadelphia next October.

Recent Literature.

Outlines of Medical Diagnosis. Prepared for the Use of Students, at the Harvard Medical School, Boston. Fourth edition. Boston: F. H. Thomas Co. 1906.

The scope of this small volume is indicated by its title. It serves its purpose well in directing the attention of the student to the important lines of investigation in the study of individual cases, as well as in indicating the main chemical tests which have become an essential part of the physician's equipment. We commend the book as a most accurate and valuable epitome of modern diagnostic method. Its serviceableness reaches far beyond the undergraduate student.

Clinical Methods. A Guide to the Practical Study of Medicine. By ROBERT HUTCHISON, M.D., F.R.C.P., Assistant Physician to the London Hospital, and to the Hospital for Sick Children, Great Ormond Street, and HARRY RAINY, M.A., F.R.C.P. [Edin.], F.R.S.E., Examiner in Medicine and Clinical Medicine, St. Andrew's University, formerly University Tutor in Clinical Medicine, Royal Infirmary, Edinburgh. Ninth edition. Illustrated. Chicago: W. T. Keener & Co. 1905.

This small volume appears in its ninth edition, rewritten in part. The chapter on clinical bacteriology has been revised and in places wholly rewritten by Dr. James Beattie, who brings a peculiar fitness to the task. The book is well arranged for ready reference, is profusely illustrated, and is as complete in its details as one could expect from so small a volume.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, MAY 10, 1906.

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THE SIGNIFICANCE OF HABIT.

THE recognition of the simple fact that habit has much potency both for good and evil in the education of the child and in the production of various conditions later known as disease or health, is coming to be more generally accepted. It is apparent that in many senses the child is the father of the man and that the early months and years are all-important in determining the efficiency or failure of the later years. This general principle has long been acknowledged and more or less vaguely acted upon, but a definite tendency is now apparent to study, on the basis of habit, many processes which have come to be called diseases, with most admirable therapeutic results. It is not to be doubted that much of the so-called nervous disturbance of later years is directly dependent upon errors and false starts in early life. Apparently, of late, a considerable degree of the training of children, using that term in its broad sense, is falling to the lot of physicians, a function formerly in great measure usurped by the clergy. However this may be, we can no longer evade the fact that from a strictly medical standpoint the training of children has the greatest importance, and that the prevention of the modern diseases of civilization should be comitated early and not late, if such conditions are ultimately to be eradicated.

In this connection we note with interest a paper from the pen of Dr. G. Eric Campbell Pritchard, of London, which appears in a recent edition of the *Lancet*. Dr. Pritchard emphasizes his communication "The Training of Nerve Centers in Children," and discusses in a most readable and convincing way the necessity of

"rehabilitating an old friend in new vestments." He concerns himself with the application of the principle of education to the lower nerve centers controlling organic function, and directs his remarks not only to defective children, but also to those of superior intelligence who suffer from initial disabilities. It is in general undesirable, he points out, to distinguish sharply between so-called functional and organic varieties of disease. It is particularly unfortunate that our attention should be so concentrated upon certain local pathological processes that we fail to recognize the ultimate influence and authority of the central nervous system in carrying on nutritional and vegetative functions. As an example of this principle, which is too often forgotten, the change in our conception of fatigue is quoted. Formerly, in the training of an athlete the muscular elements were supposed to be responsible for the sense of fatigue. Now, we realize that the cell bodies which preside over muscular movement are the more essential element, and that the general nervous condition of the athlete is also of the highest importance if his feat is to be successfully performed. In general, it is very properly pointed out that in spite of the apparent automatic character of organic function, neural habits are being formed which must ultimately have results either good or bad.

Dr. Pritchard discusses with much acumen the intimate relation and the practical significance of the nervous system and other organs of the body, and insists on the importance of habit in the perpetuation of what we are accustomed to speak of as normal functions. From this as a basis he proceeds to show in a way which must be convincing that much of our organic life is simply a question of habit, and what is more important, from the medical standpoint, that much of our weakness and inefficiency, whether due to so-called disease of certain organs or of an incapable nervous system, is directly traceable to the same source. It is not our present purpose to enter into detail regarding the various habits which are, on the one hand, productive of good, and on the other, of ill effects. We desire merely to emphasize the fact, which possibly because of its somewhat self-evident character has been curiously overlooked, that a recognition of habit is a positive curative factor of many abnormal conditions, is essential to a proper understanding of their cause. Dr. Pritchard's statement is one which may well be read by all those to whom the importance of this principle has not spread.

BENJAMIN FRANKLIN'S CONTRIBUTION
TO MEDICINE.

SUITABLE exercises, commemorative of the two hundredth anniversary of the birth of Benjamin Franklin, were recently held in Philadelphia. Franklin's versatility has often been the subject of comment, but it may not be generally known that he had and expressed certain ideas on medical subjects which were far in advance of his time. To this fact President Eliot called attention in an address made on the occasion of the commemorative exercises on the subject "Franklin as Printer and Philosopher."

As a natural philosopher Franklin was justly distinguished, and he appears to have had, what is always valuable, an active scientific imagination. Printing was but one of his many interests. He was the first to give accurate information on the origin of certain storms, on the usefulness of certain types of fireplace and on many applications of electricity apart from those for which he is chiefly renowned. President Eliot also draws attention to the sagacity of Franklin's scientific inquiries, as illustrated by his theories of colds and their causes. He combated, it seems, the idea that colds arise either from dampness or exposure. He pointed out the fact that savages and sailors are not liable to colds, and that those persons who are careless regarding draughts and exposure usually enjoy a like freedom. From these and similar observations he concluded that colds and so-called influenzas are the result of contagion, and that the affection is transmitted through personal contact or association rather than by means of the causes which were then almost universally, and still are to a considerable degree, attributed as sufficient.

It is not to be questioned that such an attitude showed a remarkable degree of scientific acumen, which later research has in large measure confirmed. We sometimes think, however, that the pendulum has swung rather too far on the side of infection and taken too little into account those essential predispositions which make infection possible. No doubt the draught and the exposure still play their part in a perfectly physiological way in rendering mucous membranes susceptible to the inroads of the organisms which produce the final result. The matter still remains difficult of explanation, but this in no sense detracts from what must have been regarded one hundred and fifty years ago as a most radical and heretical doctrine. It illustrates again the principle that scientific discoveries of moment are frequently foreshadowed long before they have

attained the dignity of scientific demonstration. This Franklin accomplished in many lines of investigation.

REPORT OF THE NEW YORK STATE CHARITIES
AND AID ASSOCIATION.

THE thirteenth annual report of this most useful association to the New York State Commission in Lunacy is in our hands and gives one an excellent idea of the work which this organization is accomplishing and the influence it is bringing to bear for the betterment of certain social conditions. It is suggestive of the tact which has been exercised that six of the association visitors have been appointed by the governor as managers of the institutions which they formerly visited for purposes of criticism and advice. There are at present forty-eight legally appointed visitors to state hospitals who have presented reports to the main society. The recommendations made in these reports are by no means unanimously indorsed, but they serve to show what impression the institutions make upon intelligent men and women, and hence are of distinct value.

Considerable important recent legislation affecting the insane has been enacted during the last year. A new law, for example, re-establishes boards of managers for the state hospitals which acts in such a way that the position of the superintendents is greatly strengthened, and the boards of managers are given actual control over internal affairs, whereas the State Commission in Lunacy retains complete financial control, as it has since 1893.

It is gratifying to note that for the first time in several years the state hospitals closed their fiscal year without a deficiency. This is regarded as being due to several causes, among which are the unusually high recovery rate of patients admitted, and the smaller number of persons becoming insane. These facts are of special interest in view of the widely heralded increase in insanity. The report contains much further information of interest to the psychiatrist and to those interested in the broader problems concerning the support of the dependent insane. It bears evidence, also, to the unquestioned fact that mental disease is coming to be studied like other ills to which flesh is heir, and that public interest is awakening to the necessities of the situation both on the humanitarian and scientific side.

MEDICAL NOTES.

GIFT TO THE MEDICAL DEPARTMENT OF WASHINGTON UNIVERSITY. — It is announced that a gift of \$50,000 has been made by Mr. Robert S. Bookings and Mr. Adolphus Busch to the Medical Department of Washington University, St. Louis.

THE INTERNATIONAL CONFERENCE OF SOCIETIES OF THE RED CROSS. — The announcement is made that the International Conference of Societies of the Red Cross will be held in London in June of next year. This conference is held every five years, and this is the first in England.

THE NEW SERIES OF AMERICAN MEDICINE. — The previously announced appearance of *American Medicine* in the form of a monthly has occurred with the April issue. The page is reduced in size, but still retains the double column form, and the arrangement of the subject matter bears evidence of the continuance of the policy which has characterized its predecessor. A new feature is a summary of the editorial comment of other journals.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, May 9, 1906, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 31, scarlatina 25, typhoid fever 11, measles 79, tuberculosis 57, smallpox 0.

The death-rate of the reported deaths for the week ending May 9, 1906, was 20.24.

BOSTON MORTALITY STATISTICS. — The total number of deaths reported to the Board of Health for the week ending Saturday, May 5, 1906, was 226, against 233 the corresponding week of last year, showing a decrease of 7 deaths and making the death-rate for the week 19.80. Of this number 113 were males and 113 were females; 216 were white and 10 colored; 131 were born in the United States, 90 in foreign countries and 5 unknown; 51 were of American parentage, 118 of foreign parentage and 27 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 36 cases and 2 deaths; scarlatina, 42 cases, 1 death; typhoid fever, 9 cases and 2 deaths; measles, 86 cases and 6 deaths; tuberculosis, 43 cases and 14 deaths; smallpox, 1 case and no deaths. The deaths from pneumonia were 38, whooping cough 1, heart disease 21, bronchitis 5, and marasmus 7. There were 8 deaths from violent causes. The number of children who

died under one year was 43; the number under five years, 62. The number of persons who died over sixty years of age was 46. The deaths in public institutions were 66.

There were 5 cases and 3 deaths reported from cerebrospinal meningitis during the week.

THE BOSTON MEDICAL ASSOCIATION. — At the recent centennial of the Boston Medical Association, held at the Boston Medical Library, Dr. John Baptist Blake read a suitable poem commemorative of the occasion.

NEW ENGLAND ASSOCIATION FOR THE EDUCATION OF NURSES. — We call attention in another place to the meeting of the recently organized New England Association for the Education of Nurses. This meeting should be well attended. Much recent discussion on the subject has demonstrated that the whole nursing problem is passing through a critical stage, and that the utmost deliberation is required in looking toward the future. This meeting should give opportunity for the freest and most candid discussion of the various aspects of a difficult question.

NEW YORK.

CEREBROSPINAL MENINGITIS ON AN ITALIAN STEAMER. — On the steamer *Il Piemonte* of the Italian line, which arrived at quarantine on May 3 with more than twelve hundred immigrants, three persons died from cerebrospinal meningitis during the voyage from Palermo. At the time of her arrival, five other of the steerage passengers were ill with the disease, and these were removed to the hospital on Swinburne Island, where one of them, a woman, died on the following day.

A SEASIDE PARK. Mayor McClellan has signed the Seaside Park bill recently passed by the Legislature, which permits the city to expend \$2,500,000 for the purchase of a tract of land at or near the seashore for a public park. The park, when established, is to be under the control of the Park Department, but will be for the use also of the Health and Charities Departments and of the trustees of Bellevue and Allied Hospitals, in the way of convalescent homes and fresh-air facilities. Charitable societies may also lease space in the park.

PASSAGE OF STEVENS WAINWRIGHT BILL. The Stevens Wainwright bill, which requires all medicinal preparations containing alcohol and various other narcotic or potent drugs to

be so labelled as to state the presence and the percentage of such ingredients, has passed the Senate at Albany by a vote of 30 to 15. This admirable measure was introduced in the Legislature by the New York State General Committee for Safeguarding the Sale of Narcotics, of which Dr. A. Jacobi is vice-chairman and which is composed of a number of prominent physicians, clergymen and other citizens.

DEATH-RATE. — The condensed quarterly report of the Health Department's bureau of records for the quarter ending Dec. 31, 1905, which has just been issued, shows that the death-rate was 16.43, as against 17.23 for the corresponding quarters of the preceding five years. Comparing the figures of the principal causes of death with those of the quinquennial averages of the corresponding quarters, corrected to correspond with the increase in population, the following decreases are found: All causes, 773; under one year, 212; under five years, 590; typhoid fever, 109; malarial fevers, 34; small-pox, 9; measles, 1; scarlet fever, 59; whooping-cough, 18; diphtheria and croup, 194; influenza, 18; pulmonary tuberculosis, 4; other tubercular diseases, 54; apoplexy, 47; heart diseases, 10; acute bronchitis, 141; pneumonia, 113; Bright's disease and nephritis, 39; old age, 89. The few causes showing increases are as follows: cancer, 58; cerebrospinal meningitis, 66; violent deaths, 119.

OFFICERS OF THE AMERICAN THERAPEUTIC SOCIETY. — At the annual meeting of the American Therapeutic Society, which was held in New York May 3-5, the following officers were elected for the ensuing year: President, Dr. Robert Reyburn, Washington; first vice-president, Dr. J. E. Janvrin, New York; second vice-president, Dr. Frederic H. Gerrish, Portland, Me.; third vice-president, Dr. Howard Van Rensselaer, Albany, N. Y.; secretary, Dr. Noble P. Barnes, Washington; treasurer, Dr. John S. McLain, Washington. Washington, D. C., was fixed upon as the next place of meeting. A banquet was given to the Society by the New York members at the Waldorf-Astoria on the evening of May 4. Dr. Edward D. Fisher, chairman of the committee of arrangements, acted as toastmaster, and after-dinner speeches were made by Dr. Carl Beck, the president, Drs. Satterthwaite and Wilcox of New York and O. T. Osborne of New Haven, ex-presidents, Dr. Robert Reyburn of Washington, president-elect, and by Drs. Pottenger of Los Angeles, who was attending the meeting of the

California State Medical Society in San Francisco at the time of the earthquake, Gerrish of Portland, Me., Henderson of Toronto, Canada, J. Madison Taylor of Philadelphia and William J. Morton of New York.

Obituary.

JAMES WINCHELL COLEMAN ELY, M.D.

Dr. JAMES W. C. ELY died May 7 in Providence, R. I., at the age of eighty-six years, one of the oldest and most respected of the physicians of his city. Dr. Ely was born in Windsor, Vt., Oct. 2, 1820, and traced his descent back to Nathaniel Ely, who came to this country from England in 1633. He was graduated from Brown University in 1842, and studied medicine in Boston, receiving his degree from Harvard University in 1846. He returned to Providence and remained there throughout his long and active professional career. He at once became a member of the Rhode Island Medical Society, which he served as secretary, treasurer and president, and also as censor. He later became physician to the Providence Dispensary and city physician, a position which he held for sixteen years. He was also an attending physician at the Rhode Island Hospital in 1868 until 1874, when he became a consulting physician. He was likewise associated with the Butler Hospital for the Insane as consulting physician and held many offices in associations not strictly medical. Among his other appointments he served on the consulting staff of the Providence Lying-In Hospital and founded the Providence Medical Association. His career throughout was a most honorable one in which he served his profession as well as the city of his adoption faithfully and well. He is survived by his wife and one son.

A report is given elsewhere of a social celebration which was given in his honor only ten days before his death.

Miscellany.

IN HONOR OF DR. J. W. C. ELY'S SIXTY YEARS OF ACTIVE PRACTICE.

ONE hundred and thirty members of the medical profession in Rhode Island, with distinguished representatives from Boston and elsewhere, met in Providence on Friday evening, April 27, to attend a dinner given in honor of Dr. James Winchell Coleman Ely, the dean of the Rhode Island physicians, which had for its object the recognition of the sixtieth anniversary of Dr. Ely's entrance upon the practice of his profession in Providence. Dr. G. Alden Blumer presided. A loving cup of massive form and impressive workmanship was presented to the guest of honor with the following inscription: "Presented to James Winchell Coleman Ely, A.B., Brown University, 1842; M.D., Harvard

University, 1846, by the medical profession of Rhode Island, as a token of affection and esteem and in commemoration of his sixtieth anniversary as a practicing physician in the city of Providence, April 27, 1906.

Dr. Blumer on presenting the loving cup made a brief but touching and eloquent address, the closing part of which, referring to Dr. Ely's advanced age, was as follows:

"Much has been said of late, as the result of a grave misunderstanding of the words of the witty medical philosopher, whose charming letter from Oxford has just been read to you, to lead one to believe that the young of our day and generation are so wise that they can set aside the experience of their elders in impudent reversal of the proverb, 'With the ancient is wisdom, and in length of days understanding.' The life of our honored guest refutes that erroneous notion if ever life did, and there are others present at this banquet who can lay emphatic claim to a proportionate share in that living refutation. Surely one cannot adopt that view without flying in the face of the history of every age and every country. Even as Michael Angelo drew designs for St. Peter's in his eighty-second year, so do our own Rhode Island octogenarians do things that show us younger and often less active men that the freshness of youth may survive in old age. It is a trite saying that a man is as old as his arteries, and, thank Heaven, Dr. Ely has many of them in his brain, whatever their condition may be elsewhere, that are still soft. This is not the place for a disquisition on the philosophy of old age, still less its pathology, though one may admit in passing that with some, while faculties wane, self-confidence, even in good men, waxes apace. But our guest is one of those who has never lost for a moment the power of self-adjustment, and of recognizing new conditions as they arise. If times have changed he has always changed with the times. Never for a moment has he viewed with jealous eye the rise into prominence of younger men, or suffered his own authority, well-earned as it is, to stand in the way of progress. 'While I live,' said Victor Hugo, 'it is my duty to produce.' It is the duty of the world to select, from what I produce, that which is worth keeping. The world will discharge its duty. I shall discharge mine.' I have never heard Dr. Ely (for he is a more modest man than Victor Hugo) use grandiloquent language like that, but that mental attitude I conceive to reflect our friend's outlook upon life. And nothing embitters old age more than the thought that we grudge it even that which it is capable of doing well, or even better than ourselves. If I were asked to name the characteristic which more than any other has endeared Dr. Ely to his fellowmen, I should say that it is his absolute honesty—honesty to himself, honesty to his brethren, honesty to his patients, a character which stands four square to all the world. The late Col. Alex. Biddle, a manager of the Pennsylvania Hospital, once informed a friend of mine that at the close of the Battle of Gettysburg, hav-

ing had command of a brigade, he was directed to make a report. He sat for some time before his blank sheets and then simply wrote in the few words I am now using, that he proceeded to the point to which he had been ordered and there remained with his command until the close of the battle. In that terse report we have the glorious summing up of such lives as that of Dr. Ely."

Dr. Blumer had previously read the following letter from Dr. William Osler, regretting his inability to be present:

"Allow me to join in the joy of your colleagues of Rhode Island that you have been spared so long to grace the profession which we love and in which you have been so devoted a worker. The life you have lived is an encouragement to us all. Setting at naught both the psalmist and the preacher, you have taught us that the strength of old age may be neither labor nor sorrow when the golden bowl remains unbroken and the silver cord retains its tenseness. What a satisfaction it must be to have reached the rare reward, vouchsafed to so few—the frosty yet kindly old age and all that should accompany it, with at the same time a mental and bodily vigor that makes you a still notable figure in our midst. I call it a reward, and yet is it not rather a legitimate interest which many more should earn? As I read it, the great lesson of your life is that you have had the art to grow old gracefully, a lesson so hard to learn and so often a bitter mistake. Lear was right. 'Age is unnecessary'—not an inevitable and grievous burden which death alone unloads. You had the good sense to recognize early that life is a progressive evolution, that the times change, and that if we do not change with them the stream leaves us on the banks with no one to lament our fate but a querulous old man sighing for the days that are no more. And so it has been granted to you to escape that tragedy so often seen and so vividly depicted by Matthew Arnold in 'Empedocles on Etna':

'But he whose youth fell on a different world
From that on which his exiled life is thrown,
Whose mind was fed on other food, was train'd
By other rules than are in vogue to-day.
Whose habit of thought is hatched, who will not
change
But in a world he loves not must subsist
In ceaseless opposition.'

"You met the coming generation with a helpful smile, not with a scowl, knowing well that the problems it had to face differed from those with which you battled, and, grasping this truth, it was given you the rare privilege of retaining a sympathetic interest in all the phases of life. The young man has found in you a trusty guide, the middle-aged a philosopher and the aged a true friend. The beauty of your life has been in its freshness, in the keenness with which you have entered into the work of our profession and the readiness with which you have accepted responsibilities too often shirked by men who reach a certain stage and age. I can conceive of no more

enviable position in a community than that which you have reached.

"You remember one evening at dinner that I taxed you with having written sonnets. It was my dullness that made me suggest it. I should have known better. You have written man's best poem — the epic of a life full of human spirit, a poem which your friends know by heart and which will remain as a precious memory long after you have crossed the bar."

Dr. C. T. Gardner responded for the medical profession at large, Dr. F. C. Shattuck for the Harvard Medical School, President W. H. P. Faunce for Brown University, Charles A. Catlin for the trustees of the Rhode Island Hospital and Rathbone Gardner for the trustees of the Butler Hospital.

a long time under such circumstances. My wife and I each grabbed a child and ran downstairs ready to get into the street. Our house was not seriously damaged, but the chimneys went, as they did all over town. Gas and water pipes broke and electric wires were torn away.

The damage from the earthquake alone would have been immaterial, but the breaking of water mains was fatal. For a time no one realized the danger from fire. I was all over town in a machine, and beyond a few buildings down, everything seemed as usual until eight or nine, the earthquake having been at 5.15. Fires started in many places and soon made headway in the parts of the town without water. By noon we knew all the business section and a great part of the southern portion of the city was doomed. Up to nightfall it seemed certain that destruction would not advance beyond the square on which you were when out here. A sudden change came, however, by midnight, and the fire swooped over Sutter Street, on which my office used to be. I had time to save a microscope and some records, but lost everything else. I could have saved more, but all night my machine was

OPENING EXERCISES, BY THE KING AND QUEEN OF PORTUGAL, OF THE INTERNATIONAL MEDICAL CONGRESS AT LISBON, APRIL 19, 1906.



Dr. Costa Almeida, President of the Congress, sitting on right of the Queen.

The Queen. The King.

Professor Bombarda, Secretary General, reading the Inaugural Statement.

LETTERS FROM SAN FRANCISCO.

THE following letter, which is of interest in connection with the recent earthquake, has been received in Boston from a prominent medical practitioner in San Francisco. It is an individual statement by a competent eye-witness, and all such testimony in regard to such an event has its value.

OAKLAND, April 28, 1906.

We have had a rush of experiences these last few days, and letters can do little justice to them. The earthquake was terrifying, one felt so absolutely helpless, and the twisting and rocking of the house seemed beyond the power of any material to resist. Forty-five seconds seems

busy getting people out of the threatened districts. Next morning early, my wife and the children came over to my father's, where they now are. That day and night the fire swept across and up the city and was stopped two squares away from our home.

You have no idea of the destruction by reading of it; we are just beginning to realize it ourselves. The people have been wonderful, and the spirit abroad is a brave one. I have charge of the medical wards at the Presidio General Hospital, as the regular men are on other duty. It is like being back in the interne days again. The camps outside are getting into shape and there is yet no serious trouble. No one knows what the future will bring. The banks and insurance men will not pass judgment for some weeks, and it will at best take years to build up the town. The big buildings were not damaged by the earthquake, and the spirit in the air says they shall rise again from the fire. Of course, it knocks my plans on the head. My father

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, APRIL 28, 1906.

| CITIES. | Reported deaths in each. | Deaths under five years. | CITIES. | Reported deaths in each. | Deaths under five years. |
|------------------------|--------------------------|--------------------------|-----------------------|--------------------------|--------------------------|
| New York | 1,523 | 320 | Quincy | 5 | 1 |
| Chicago | 621 | 363 | Waltham | 5 | — |
| Philadelphia | 587 | 171 | Gloucester | — | — |
| St. Louis | — | — | Pittsfield | 10 | — |
| Baltimore | 190 | 59 | Brookline | 7 | 4 |
| Cleveland | — | — | North Adams | 9 | 0 |
| Buffalo | — | — | Chicopee | 5 | 1 |
| Pittsburg | — | — | Northampton | 10 | 1 |
| Cincinnati | — | — | Medford | 2 | — |
| Milwaukee | — | — | Beverly | 6 | — |
| Washington | — | — | Hyde Park | 4 | 1 |
| Providence | 76 | 22 | Newburyport | 2 | 0 |
| Boston | 225 | 61 | Leominster | 4 | 1 |
| Worcester | 39 | 16 | Melrose | 3 | 0 |
| Fall River | 44 | 19 | Woburn | 3 | 2 |
| Cambridge | 20 | 7 | Marlborough | 5 | 0 |
| Lowell | 40 | 12 | Westfield | — | — |
| Lynn | 20 | 3 | Peabody | — | — |
| New Bedford | 27 | 13 | Revere | 3 | 1 |
| Springfield | 25 | 5 | Clinton | 4 | 1 |
| Lawrence | 21 | 10 | Attleboro | 4 | 0 |
| Somerville | 21 | 10 | Adams | — | — |
| Holyoke | 21 | 10 | Gardner | 4 | 2 |
| Brookton | 10 | 2 | Milford | 4 | — |
| Malden | 10 | 1 | Weymouth | 4 | — |
| Salem | 14 | — | Frammingham | 5 | 4 |
| Chelsea | 19 | 6 | Watertown | 5 | 3 |
| Haverhill | 10 | 2 | Plymouth | — | — |
| Newton | 15 | 6 | Southbridge | 5 | 3 |
| Fitchburg | — | — | Wakefield | — | — |
| Taunton | — | — | Webster | — | — |
| Everett | — | — | | | |

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING MAY 5, 1906.

C. H. T. LOWNDEN, surgeon. Detached from the "Texas," and ordered to the "Virginia," April 27.

S. G. EVANS, surgeon. Detached from the Naval Recruiting Station, Denver, Col., and ordered to the "Louisiana," April 27.

L. MORRIS, surgeon. Detached from the "Iowa," and ordered home to wait orders, April 27.

M. K. JOHNSON, surgeon. Detached from the "Maine," and ordered to the "Iowa," April 27.

R. B. WILLIAMS, passed surgeon. Detached from the "West Virginia," and ordered to the "Maine," April 27.

J. R. DYKES, assistant surgeon. Ordered to the Navy Yard, New York, April 27.

F. W. S. DEAN, assistant surgeon. Ordered to the Naval Recruiting Station, Denver, Col., April 27.

P. R. STALNAKER, assistant surgeon. Ordered to the "West Virginia," April 27.

J. B. MEARS, assistant surgeon. Ordered to the "Minneapolis," May 1.

J. S. K. REEVES, assistant surgeon. Detached from the "Minneapolis," and ordered home to wait orders, May 1.

E. C. White, assistant surgeon, ordered to the "Virginia," May 1.

J. P. HAYNES, assistant surgeon. Appointed assistant surgeon with rank of lieutenant, junior grade, from April 16, 1906, May 2.

W. G. STEADMAN, Jr., acting assistant surgeon. Appointed acting assistant surgeon, from April 27, 1906, May 2.

SOCIETY NOTICES.

NEW ENGLAND HOSPITAL MEDICAL SOCIETY.—The regular meeting of the New England Hospital Medical Society will be held at Hotel Bristol, Copley Square, Thursday, May 17, 1906, 7:30 P.M. Section of General Medicine, Dr. Blanche A. Denig, Chairman.

Reports of cases treated with Mechanical Vibration Stimulation, with illustration of the technique, by Drs. Dexter, Bond, Stevens and Denig.

BLANCHE A. DENIG, M.D., Secretary.

NEW ENGLAND ASSOCIATION FOR THE EDUCATION OF NURSES.—There will be a meeting at Huntington Hall, Massachusetts Institute of Technology, Boylston Street, on Friday,

May 11, 1906, at 4 and at 8 P.M. Paper for afternoon: "What proportion of a nurse's training should be spent in district nursing?" Miss Annette Fisher. Discussion. "The present curriculum from the point of view of the nurse." Dr. Hugh Cabot. Discussion.

S.P.M.: "Are the applications for admission to training schools diminishing in number?" Statistics read by Dr. G. Wolcott. Discussion. "The advantages of separate organization for training schools for nurses from that of the hospital." Dr. Alfred Worcester. Discussion: Dr. G. H. M. Rowe, Dr. Edward Cowles, Dr. Herbert B. Howard, Mrs. W. W. Vaughn, Dr. F. W. Patch. A cordial invitation to be present is extended to those interested.

MISS EMMA A. ANDERSON, Secretary.

DR. RICHARD C. CABOT, President.

RESIGNATION.

HENRY P. BOWDITCH, M.D., George Higginson Professor of Physiology in the Medical School of Harvard University, has resigned, the resignation to take effect at the end of the current academic year.

RECENT DEATHS.

DR. HOWARD GRAHAM WETMORE, of New York, died on April 27, at High View, Sullivan County, N. Y. He was born in New York, and was graduated from the College of Physicians and Surgeons, in 1879.

DR. D. H. MANX, of Brooklyn, N. Y., died on May 2. He was a native of Delhi, Delaware County, N. Y., and seventy years of age. At the time of his death he was Grand Chief Templar of the International Order of Good Templars, in the State of New York.

THOMAS JAMES GARRIGAN, M.D., M.M.S.S., died in North Brookfield, April 20, 1906, aged fifty-one years.

BOOKS AND PAMPHLETS RECEIVED.

Lippincott's New Medical Series. Edited by Francis R. Packard, M.D. The Medical Diseases of Infancy and Childhood, with Points on the Anatomy, Physiology and Hygiene peculiar to the Developing Period. By Alfred Cleveland Cotton, A.M., M.D. Illustrated. Philadelphia and London: J. B. Lippincott Co. 1906.

Annual Report of the Surgeon-General of the Public Health and Marine-Hospital Service of the United States for the Fiscal Year 1905. Washington, 1906.

The Operative Treatment of Fractures. By W. Arbuthnot Lane, M.S., F.R.C.S. Illustrated. London: The Medical Publishing Co., Ltd. 1905.

Progressive Medicine. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., assisted by H. R. M. Landis, M.D. Philadelphia and New York: Lea Brothers & Co. March 1, 1906.

The Examination of the Function of the Intestines by Means of the Test-Diet, Its Application in Medical Practice and Its Diagnostic and Therapeutic Value. By Prof. Dr. Adolf Schmidt. Authorized translation from the latest German edition. By Charles D. Aaron, M.D. Philadelphia: F. A. Davis Co. 1906.

A New and Rational Operation for the Correction of Prominent Ear. By J. T. McShane, M.D. Reprint.

Pneumatic Differentiation in the Treatment of Organic Disease of the Heart. By Charles E. Quimby, A.M., M.D. Reprint.

The Radical Operation for Inguinal Hernia. A Method for Closing all Layers with a Single Tier of Easily Removable Non-buried Sutures. By Joseph Rihus Eastman, M.D. Reprint.

Extra-Uterine Pregnancy. By Charles P. Noble, M.D. Reprint.

The Treatment of Retropositions of the Uterus. By Charles P. Noble, M.D. Reprint.

Cancer of the Uterus. By Charles P. Noble, M.D. Reprint. Blakiston's Quiz-Compend. A Compend of Obstetrics. Especially Adapted to the Use of Medical Students and Physicians. By Henry G. Landis, A.M., M.D. Revised and edited by William H. Wells, M.D. Eighth edition. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1906.

Diseases of the Nervous System Resulting from Accident and Injury. By Peerce Bailey, A.M., M.D. Illustrated. New York and London: D. Appleton & Co. 1906.

Ninety-second Annual Report of the Trustees of the Massachusetts General Hospital, including the General Hospital in Boston, the McLean Hospital and the Convalescent Home in Waverley. 1905. Boston: The Barba Press. 1906.

Original Articles.

TREATMENT OF CHRONIC DISEASES OF THE
HEART BY THE NAEUHEIM METHODS;
ITS INDICATIONS AND CONTRA-
INDICATIONS.*

BY FRANCIS P. KINSBUTT, M.D.,

*Professor of Clinical Medicine, College of Physicians and Surgeons,
Medical Department of Columbia University, New York; Physician
to the Presbyterian Hospital, New York.*

SEVERAL months ago I was honored by an invitation from Dr. R. C. Cabot to read a paper before the Boston branch of the Massachusetts Medical Society on the Nauheim treatment of chronic cardiovascular diseases. It gave me much pleasure to accept the invitation, but in accepting I was conscious that much of the material of a paper on this subject would be very familiar to the members of this society. For this I ask your indulgence.

The opportunity has been afforded me of studying the Nauheim treatment under especially advantageous conditions during the past two years. I took a five weeks' course of treatment in Nauheim in the summer of 1901 and again in 1905. During these visits, besides my personal experience of the treatment, I was granted courteous and full opportunity by Professors Theodore Schott, Heinemann and Groedel to see their most interesting cases and to examine the patients to whatever degree and with whatever frequency I desired. As the result I have been able to form a reasonable opinion of the effects to be expected in cases suitable for what is known as the Schott method of treatment, which is the combination of resistance exercises and baths, and of the contra-indications for its application.

Before considering the effects of the baths and the resistance exercises from a clinical standpoint, and their physiologic action, I shall refer briefly to the composition of the Nauheim waters and to the technique of both the baths and the exercises.

It may be of interest here to recall that the efficacy of the Nauheim baths in the treatment of many forms of rheumatism had been generally recognized in the early part of the last century. It was the unexpected improvement which was seen to occur in the often associated organic disease of the heart that led Boneke in 1860 to call attention to the therapeutic value of the Nauheim baths in cardiac disease.

The springs which are used for bathing purposes are three in number. Their chief constituents are: (1) chloride of sodium; (2) chloride of calcium; (3) carbonic acid gas, free and in combination.

They vary somewhat in their saline and carbon dioxide content. The range in the chloride of sodium strength is between 2½% and 3%, in the chloride of calcium between ½% and 1%. The free carbonic acid gas content varies between 1.0074 and 2.3764 parts per 1,000 gm., equalling

respectively 571 cc. and 1216.6 cc. In other terms, each liter of the spring richest in carbonic acid gas contains 1216.6 cc. of the gas. The range of the natural temperatures of the different springs is between 31.2° Celsius (88.16° F.) and 35.3° Celsius (95.54° F.).

A system has been elaborated which permits of a wide variation in the saline and carbon-dioxide strength of the baths, and as they vary in their different constituents they are known as:

(1) The ordinary brine bath (*gewöhnliches Soolbad*), free from carbonic acid but rich in salines.

(2) The thermal brine bath (*Thermalbad*), rich in salines and containing a considerable amount of carbonic acid in combination.

(3) The thermal effervescent bath (*Thermal Sprudel*), holding an intermediate position between the thermal and the bath next to be described.

(4) The effervescent bath (*Sprudelbad*), which receives its waters direct from the subterranean springs, with the full saline and carbonic acid content and with only a very slight diminution in their natural temperature.

(5) The current thermal brine bath and current effervescent bath (*Strombad* and *Sprudelstrombad*). These baths also receive the water as it leaves the springs. The water forcibly enters at the lowest level of the bathtub, and by means of overflow pipes at the top leaves it throughout the entire period of immersion. The saline strength of the various baths can be increased at will by the addition of the crystallizable waste product, motherlye (*Mutterlauge*), of the neighboring salt works.

The course of baths usually begins with the brine or the thermal brine bath, strengthened after a few immersions by the addition of gradually increasing quantities of motherlye. After several days the thermal sprudel and again after a similar period, usually a fortnight from the beginning of treatment, the effervescent sprudel baths are substituted. The effervescent current baths are reserved for the final days of treatment and often are not given. The duration of the baths at the beginning of treatment is not longer than six to ten minutes, gradually lengthened to twenty minutes; the latter time is rarely exceeded. The temperature of the first baths is generally from 92° to 95° F. It is reduced with succeeding baths. Temperatures lower than 84° F. rarely are used. Usually not more than two or three successive baths are permitted in as many days, when a day of interval is prescribed. The patient on emerging from the bath is wrapped in heated towels and quickly dried by the attendant. Rest for at least an hour in the recumbent position is imposed after the bath. The number of baths varies from 20 to 35. The system described generally prevails but many variations are and should be made, in our judgment, to adapt both the bath and the exercises directly to be described to the individual case.

* Read at a Library Meeting of the Suffolk District Medical Society, Medical Section, March 28, 1906.

In healthy subjects the immediate effects of

immersion in the baths is a notable diminution in the frequency of the pulse and a distinct increase in its volume. Usually there is also a slight increase in the depth of the respirations with a corresponding decrease in their number. A vaso-dilatation of the superficial vessels, as indicated by the uniform reddening of the surface of the body, is noticeable. This is especially marked in the effervescent Sprudel bath. The blood pressure has a short initial rise followed by a depression to or below the original level, succeeded by a renewed rise to its former height.

A series of very careful observations in regard to the effect of the bath upon the pulse were made by me in my own person during my visit in 1904 and confirmed in the summer of 1905.

The pulse was taken before undressing, and any increase in frequency during the act was allowed to subside before immersion. After one and one-half to two minutes of immersion, either in the simple brine or in the effervescent brine baths, the frequency was invariably reduced from 8 to 10 beats, if the pulse was 76 or more before immersion, and its volume was notably increased; if under 70 before immersion, the reduction did not exceed 6 beats. The pulse-rate is usually accepted as a guide for the length of the bath. Its duration invariably should be within the limits of causing any increase in the frequency of the pulse. In my own case, at the beginning of treatment, the pulse-rate began to quicken after ten minutes; later in the treatment an increase in frequency occurred only at the end of a twenty-minute immersion. The reduction in the pulse-rate was fully maintained during the subsequent period of rest.

The evidence of vaso-dilatation of the surface vessels was always well marked, and with it there was a sensation of general and very agreeable warmth following the first sensation of coolness.

The exercises, known as the Schott resistance exercises, used in connection with the baths, a combination to which I have applied the name of the Schott Treatment, were introduced by the late Dr. August Schott and his brother, Dr. Theodore Schott, as the result of elaborate and prolonged experiment. In their words, as quoted by Bezly Thorne,¹ "they consist of movements designed to bring into successive and regulated action almost every collective system of voluntary muscles comprised in the human frame. They consist of slowly conducted flexion, extension, adduction, abduction and rotation, in orderly succession, of the arms, trunk and lower extremities. Each succeeding movement is resisted by an attendant to such an extent as to oppose without arresting it. Each movement must be slowly and evenly made with a definite and uniform effort on the part of the patient. The office of the attendant is not limited to resisting the movements with equally uniform but slightly inferior force, but it is his duty to impose a short interval of rest after each movement, to

enjoin slow and regular breathing and more especially, by observing the rate of the breathing and its force as indicated by the *ala nasi*, to insure that no undue strain is placed on heart or lungs."

The attendant must bear upon but never grasp or constrict the patient's limbs, lest the movement of groups of muscles be impeded or arbitrarily promoted. The resistance, always slight at first, is gradually increased with progressive treatment. The respirations and pulse should largely be the guide for the degree of resistance and the number of movements given. If either increases in frequency, the exercises should be modified or discontinued. The duration of the single treatment is, as a rule, fifteen to thirty minutes, including the intervals of rest. There are nineteen different exercises, of the simplest character, and they are fully described, with illustrations, in Bezly Thorne's book. The description of a single one will illustrate the technique. The patient extends his hands in front of him at the level of the shoulders, the palms touching. The attendant, standing in front of him, places his hands on the outer surface of the patient's wrists, which rest in the hollow between his thumb and forefinger. The patient then slowly and steadily carries his arms outward until in a line with the shoulders, the attendant gently and slowly resisting. The arms and hands are then brought to their original position with a similar resistance upon the part of the attendant, whose hands have been slipped to the palmar surface of the patient's wrists. Schott usually advises the daily administration of the exercises but both the frequency and the number given on a single occasion are properly subject to many variations.

The first exact observations on the effect of exercise, of the contraction of a muscle or a group of muscles, upon the circulation in healthy subjects, were made by Ludwig and his pupils Sezelkow, Sadler and Gaskell. Further investigations were undertaken later by Mosso Chauveau Kaufman, Morey, Oertel, von Basch, Comte, Bloch, Moritz, Masing and others. Lauder Brunton and Tunncliffe² were led by the somewhat conflicting results obtained by the earlier observers to undertake another series of investigations on the effect of resistance exercise upon the local and general circulation in man. Their experiments were conducted with every precaution against error and the results suggest that an explanation of the conflicting statements made by previous investigators is to be found in the difference in strength of the exercises employed.

In gentle resistance exercises Lauder Brunton and Tunncliffe constantly observed:

Coincident with the beginning of the exercises a diminution in the pulse frequency (3 to 4 beats) and a rise in blood pressure (10 mm.). During the second half of the movements the blood pressure fell to its original level, the pulse frequency was unaltered. With the cessation of the exercises (thirty minutes' duration) the blood

¹ "The Schott Methods of Treatment of Chronic Diseases of the Heart," W. Bezly Thorne, fourth edition, London, 1905.

² British Medical Journal, 1897, ii, p. 1073.

pressure further fell (10 mm.) during thirty minutes, and the pulse rate 7 beats in five minutes, at which point both were maintained. After forty-five minutes the blood pressure had risen to its normal level but the reduction in the pulse frequency persisted. The number of respirations remained the same throughout the exercises. The sphygmogram showed a marked increase in the volume of the pulse during the exercises, the pulsations being nearly double their former size.

Edgcombe's and Bain's² experiments on the effect of resistance exercises upon the circulation are confirmatory of Lauder Brunton's. Both series of investigations showed that if the exercises were of sufficient strength to increase the frequency of the pulse the blood pressure was increased throughout their employment.

The physiologic effects of gentle resistance exercises in the healthy subject are, therefore, similar to those produced by the baths, *viz.*, a diminution in the frequency and an increase in the energy of the cardiac systole, an increase in the volume of the pulse and a diminution in peripheral resistance. The effect upon blood pressure apparently depends upon the relative degree of the increased cardiac energy and output and the peripheral vessel dilatation. If the energy and output, or both, are in excess of the dilatation, a rise in pressure results. If the inverse order obtains, the blood pressure after a short initial rise falls to its original level.

If the physiologic effects of the baths and exercises are such as have been described, their employment in many forms of cardiac inadequacy, a term expressive of a disproportion between the demand upon the heart and its ability to meet it by whatever cause produced, rests upon a scientific basis and should constitute a potent therapeutic.

Clinical experience indicates that such expectations are in a greater or less degree fulfilled. The degree of success in their employment will depend, as Bezly Thorne³ expresses it, upon:

(1) The responsive capacity in the individual case of the nervous mechanism to peripheral stimulation (cutaneous and muscular, the effect of the baths and exercises respectively); (2) the responsive capacity of the vascular tissues; (3) the degree of integrity of the myocardium, and finally, I may add upon (4) a sound clinical judgment and experience in determining these conditions.

The effects of the baths and Schott exercises may now be considered from the clinical standpoint.

In cases of cardiac dilatation suitable for this treatment one of the immediate effects of both the baths and exercises, in many instances, is a shrinkage in the outline of the cardiac area and the movement inward and sometimes slightly upward of the apex impulse. In the case of the exercises, this observation was originally made by August and Theodore Schott, and their interpretation of it, that it represented an actual diminution in the size of the heart, was at first

doubted. Radiographic studies have apparently confirmed their view and it is generally accepted at the present time by clinicians. The extent of the shrinkage, as estimated by percussion, varies. I have repeatedly observed in my clinical work a shrinkage of a half inch in the left cardiac and an equal one in the right outline after single resistance exercises of twenty minutes' duration, including the intervals of rest.

The diminution in size thus obtained after a single exercise is of very temporary duration, but it is claimed by Schott that with the continued employment of the method a more permanent diminution is effected. My own experience is in accord with this view. In cases of dilated heart without organic valvular disease, to which I shall refer later, the normal size not only is attained but may remain permanent.

The immediate effect upon the heart is presumably the result of strong reflex influences excited by peripheral muscular stimulation and acting simultaneously upon the cardiac regulator nerves and the vasomotor centers. The response is a more energetic systole (an increased driving power on the part of the heart) and dilatation of the peripheral arterioles respectively. The dilated heart chambers are more completely emptied and there is an increased transfer of blood from the venous to the arterial system. If these temporary effects can be sustained, as I believe they are by successive applications of the exercises over a considerable period of time, the purpose of all therapeutics in dilated hearts with loss of compensation is effected.

In the relief of venous hyperemia the effect of diminished venous stasis in the veins of the heart walls is sometimes lost sight of. It is the first and most potent factor in the establishment of an improved myocardial nutrition. The view which I have expressed in regard to the mode of action of the exercises I would apply also to the baths. The peripheral stimulation differs in kind but the response is similar.

In attempting to formulate the varieties of cardiac inadequacy suitable for the employment of the methods described, I shall be guided by the experience of those most familiar with this treatment and by my personal observations.

The most numerous and brilliant successes in my experience are obtained in cases of enfeebled, relaxed, dilated hearts, with or without a murmur of muscular or relative mitral incompetence, following prolonged and exhausting diseases, the various acute infectious diseases, and also associated with anemia of varied causation. In some of these cases it is difficult to speak positively of the changes which have occurred in the heart. Possibly there is no more than a loss of tone and relaxation of muscle. In others, especially those following the acute infectious diseases, there undoubtedly exists a parenchymatous myocarditis, granular or fatty, of varied severity. In the anemias, primary (chlorosis) and secondary, judging from the extreme fatty changes found in the heart muscle in the grave forms, a less severe grade of fatty degeneration is probably

² Lancet, London, 1899, i, p. 1552.

present. In all these cases there are symptoms of cardiac inadequacy. Such cases are often rebellious to the ordinary methods of treatment. Rest in the strict sense of the term is distinctly harmful. Digitalis, general tonics and a favorable climatic environment are far less efficient and rapid in their action than the combined use of the baths and resistance exercises.

Under the above head may also be included the cardiac inadequacy, which not infrequently follows severe muscular effort, the "heart strain" of many authors. In many instances a very considerable dilatation is present. Rest in these cases is certainly indicated in the beginning of treatment, but a little later the improvement is more rapid under a judicious use of the baths and exercises. The forms of cardiac affections described all come under the head of curable diseases of the heart. Unfortunately the laity is unable and the medical adviser occasionally fails to differentiate the incurable from the curable forms, and patients flock to Nauheim, with or without the advice of a physician, in the hope and often full expectation of a permanent cure of incurable organic disease of the heart.

In incurable organic disease the best results should be obtained in mitral insufficiency with dilatation, and such is unquestionably the case. Where the compensation is maintained with difficulty, and in the early stages of failure, very striking results are secured. Compensation is restored, which is often maintained indefinitely with intelligent care on the part of the patient.

Schott expects much more than this, and I must admit that I have seen extraordinary improvement where a very serious loss of compensation existed. The relief of dyspnea, of passive congestion of the various organs, the amelioration of irregular action and coincidently a diminution in the size of the heart, have been more rapid than I have seen by other methods of treatment. Groedel believes that less satisfactory results obtain where mitral stenosis is associated with insufficiency. Broadbent, on the contrary, expects good results in such cases. In aortic insufficiency the consensus of opinion is that little good may be expected from the treatment. Where dilatation is marked, with a corresponding loss of compensation, the treatment may be potent for evil. Broadbent thinks that with the *inception* of mitral incompetence in these cases some benefit may be expected.

Of the indications for the Nauheim treatment in angina pectoris one must speak with caution. Defining angina pectoris as a syndrome or symptom group, the clinical pathology of which may differ in different cases and which has to be determined in each individual instance, which may or may not be associated with gross anatomical lesion, it must be admitted that cases presenting all the symptoms of angina major are sometimes benefited by the Nauheim treatment. Several noteworthy instances have come under my observation. Many of these cases certainly belong either to the functional (hysterical) or

vasomotor type, or at least are not due to organic coronary disease. The cases which I personally studied were associated with organic disease of the heart, but certain clinical signs suggested the absence of organic coronary disease. In one of the cases a mitral lesion, which is extremely rare in angina associated with coronary lesion, was present, and the aortic valves were sound; the blood pressure was about normal (150 mm. Riva Rocci) for the age of the patient (sixty-two). My observations lead me to believe that benefit may be derived from the Nauheim treatment in cases of angina pectoris, presumably of the functional or vasomotor type, and which have not yielded to other therapeutic measures. The absence of aortic insufficiency or stenosis, of a constant arterial hypertension, and of the evidence of a probable *general* arteriosclerosis, should be useful guides in advising this treatment. In its employment much care is indicated; the baths should be warm, weak and short, and only slowly strengthened.

Is the presence of a general arteriosclerosis a contra-indication for the employment of the Nauheim treatment? A mere palpability of the accessible vessels, if unattended with arterial hypertension disproportionate to the age of the patient, certainly should not be regarded.

Groedel regards cases with a blood pressure of 150 mm. (systolic pressure Riva Rocci) as appropriate for treatment. Pressures above 170 mm. he believes to be unsuitable.

A decision on the advisability of the baths and exercises in myocarditis, other than the forms previously described, is a difficult one. The signs and symptoms of even grave forms are notoriously doubtful. A marked cardiac inadequacy, however, in the absence of evidence of valvular disease and noteworthy dilatation, especially if associated with arteriosclerosis, may reasonably be regarded as a sign of a grave impairment of myocardial integrity, and constitutes in my opinion a *positive* contra-indication for treatment.

In cases of general emphysema with its permanent increased pulmonic pressure, a positive contra-indication also exists.

It is unnecessary to more than mention the contra-indication in suspected aneurism.

Aside from general contra-indications for the employment of the baths and exercises, there are equally positive indications for the modification of both in individual cases suitable for treatment. In the case of the baths such an indication is the failure of the usual reaction during and after immersion. In these cases the evidence of at least cutaneous vaso-dilatation is lacking; the patient experiences a sensation of cold throughout the bath and subsequently, and there is often yawning and occasionally slight nervous rigors. Such a failure of reaction does not necessarily indicate that the treatment is inapplicable; it is often remedied by increasing the saline content of the bath.

In the employment of the exercises, indications for their modification consist in any increase in

the frequency of the pulse, of the respirations, of the slightest dyspnea, and of fatigue on the part of the patient. These symptoms may indicate merely that there is a slight disproportion between "demand" (degree of exercise) and "supply" (cardiac energy) and one easily to be corrected.

Indications of the *unsuitability* of both baths and exercises are a marked fall in blood pressure and an increase in the area of cardiac dullness during their administration. The latter sign has recently been observed by me in my wards in the Presbyterian Hospital in a single instance, during the use of exercises of the gentlest form. The case was one of organic mitral incompetence with dilatation and an almost complete loss of compensation.

I have occasionally observed in my use of the exercises a very slight increase in the area of cardiac dullness, without appreciable change in the blood pressure. It has been in cases of suspected myocarditis without valvular disease. If a modification of the exercises has corrected this sign, I have not regarded the treatment as inapplicable.

I would add a final word on the administration of the exercises. To be efficient they must be attended with "little exertion and no fatigue." A certain amount of training of the patient and a careful selection and instruction of the operator is necessary. To secure the proper conditions, the patient must be taught not to hold his breath or his body rigid (a common tendency), which involves increased conscious effort, to make the movements slowly and very steadily, and to recognize the degree of resistance advised by the physician. The operator should be light of hand, intelligent and trained in the observation of ordinary symptoms. The use of too great resistance, sometimes at the demand of the patient, is the most common fault of the operator and the most difficult to correct. I have found. At the beginning of treatment I am in the habit of demonstrating the degree of resistance I wish employed in the individual case. In so adapting the treatment it is needless to say that the pulse rate, the blood pressure, the site of the apex impulse and the outline of the heart, must be noted before and after the first employment of the exercises, and from time to time throughout their use.

I have had convincing proofs in my personal practice of the great benefit to be derived from the use of the resistance exercises *alone* in many forms of cardiac inadequacy. That discrimination and judicious care are required in their application, I have endeavored to show. Schott advises their employment with "self-imposed resistance" as an after treatment in many cases. It is within the competence of any one who has become thoroughly familiar with the different movements and involves little risk of injury through over-exertion.

It is to the credit of Schott that he has always maintained that the efficiency of artificial Nauheim baths is similar to that of the natural

ones, and there is abundant clinical evidence to this effect. There is equal evidence that results are attainable where the treatment is conducted under the conditions which obtain at well-ordered spas and in institutions which are not seen in cases treated at home.

I was impressed with the mental atmosphere at Nauheim. It was one of hope and cheerful expectation, the stimulus of which must ever be regarded in our therapeutics.

Purposely I have omitted the recital of cases in the present paper. I have chosen rather to give my general conclusions based upon a personal and careful study of these cases.

THE TREATMENT OF ORGANIC HEART DISEASE BY THE PNEUMATIC CABINET.*

BY CHARLES F. QUIMBY, A.M., M.D., NEW YORK, N.Y.

If the teachings of history alone were not sufficient clearly to define the difficulties which one must encounter who ventures to ask recognition of any new measure that is a radical departure from accepted methods, certainly fourteen years' experience in the struggle to gain such recognition leaves nothing further to be desired in that line of instruction. I am now the happy possessor of such an experience.

While perfectly conscious, therefore, of my position to-night, I nevertheless count myself most fortunate in the full assurance that, from such an audience, in this center of American learning and culture, my propositions and claims whether accepted or not at least will not meet that "A priori" condemnation, which is the outcome of ignorant conceit. No one can appreciate more keenly than myself the profound significance of the fundamental proposition, which it is the purpose of this paper to demonstrate and defend; that, of all available measures for the treatment of organic heart disease, the pneumatic cabinet is the most potent and valuable; and, from the standpoint of our present knowledge of cardiac pathology, provides a scientifically ideal method of treatment. No one can be more surprised in recognizing the truth of that statement than was I. Begun in a hope, born of affection, that it might give transient relief to the distress of a very dear friend, its use was continued for nearly a year before I awoke to a consciousness of what was being done. From that time each year has added unvarying proof of its incomparable value.

The difficulty which every one finds in following a technical presentation of an unfamiliar subject is my excuse for the very familiar form of this paper.

Four things are necessary for a demonstration of the value of the pneumatic cabinet in the treatment of cardiac disease. First, a review of the mechanics of the circulation; second, an explanation of the physical principles involved in the action of the cabinet; third, the applica-

*Read at a Library Meeting of the Suffolk District Medical Society, Medical Section, March 28, 1906.

tion of this action to the pathic conditions of heart disease; and, fourth, clinical evidence of the accuracy of the previous demonstration.

First, the circulation. It is sufficiently accurate for our present purpose to say that the sole function of the vascular system is mechanical, and consists simply in keeping up a flow of blood through the vessels. This flow depends upon push from behind and obstruction in front. The amount of flow is determined by the difference between pressure behind and resistance in front; or, as both of these are manifest by blood pressure, by the difference of blood pressure in heart and arteries. This difference of pressure upon which blood flow depends we shall speak of hereafter simply as differential pressure. Making this statement general we say that all circulation of the blood is determined by differential blood pressure, or tension, and is always in the direction of the lower pressure. Just here comes the point which has special bearing on the cabinet action. Since blood flow is purely mechanical, and dependent solely on difference of pressure, the result will be the same whether this difference be gained by increase in one, or decrease in the other pressure; *i.e.*, it makes no difference, so far as blood flow is concerned, whether we increase ventricular, or decrease arterial pressure. It does make a very great difference in another way, however, as we shall see later. It is evident that a single, permanent differential pressure could not maintain a circulation in which blood must be returned to keep up the supply in the heart. Therefore, this differential pressure, in which the high pressure is in the heart and the low in the arteries, lasts for only half the cardiac cycle, and in the other half there is a reversal of the pressure difference, with the low in the heart and the high in the arteries. Thus the mechanics of the circulation is seen to consist of an alternating differential pressure, first in favor of the arteries and then of the heart. A single word here as to the mechanism of the circulation. The heart and arteries are made to do their work under an established blood pressure. Their ability to maintain their nutrition, and hence power, under increased blood pressure is limited. Every permanent increase of blood pressure above normal demands an increased force expenditure, which requires increased nutritive supply. And cardiac degeneration, failure and death are inevitable results when nutritive repair of the vascular mechanism fails to keep pace with the demand for force expenditure. Therefore, increase of blood pressure as compared with tissue repair is the fundamental cause of death in all forms of organic heart disease. Since all valvular lesions cause an absolute increase of pressure in one or another heart cavity, while primary muscular degenerations cause an increase of pressure as compared with heart power, we now see why it does make a very great difference to the patient and in the duration of his life, whether that differential blood pressure which maintains his circulation is gained by a reduction or increase of pressure.

From the foregoing mechanics of the circulation we have, therefore, the following propositions:

1. The circulation depends upon an alternation of differential blood pressures, and its amount is determined solely by the difference, not by the absolute amount of such pressures.
2. The integrity of the vascular mechanism and, hence, duration of life depend directly upon the maintenance of the absolute amount of blood pressure below a fixed limit; or below an established ratio to heart power.
3. Every cardiac lesion causes an immediate and progressive increase of blood pressure, either absolute or relative, and such increased pressure is the essential cause of death. Therefore,
4. The ideal treatment of organic heart disease is to maintain the circulation under low blood pressure; or to hold any inevitable increase of pressure within the limits of possible compensation.

To what degree, then, does the pneumatic cabinet make possible this ideal treatment?

The apparatus itself is a box of sufficient size to contain a single patient, which can be closed air-tight. (Fig. 1.) On the top is a bellows by

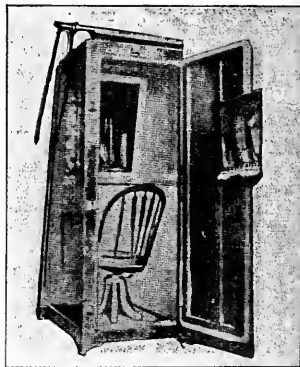


Fig. 1.—Interior view of cabinet, showing ozone generator through glass front.

means of which the air within the cabinet can be rarefied, the degree of rarefaction being shown by a mercurial gage on the front. Passing through the front is a stop-cock, and the patient is provided with a tube, to be attached to this cock on the inside, through which he can breathe from the outside, as he takes the tube in his mouth and the cock is opened. There is always, however, sufficient air in the cabinet so that the patient can breathe when desired, under the lower pressure of the rarefaction. With a patient enclosed in such a cabinet it is evident that respiration may take place under three different conditions of atmospheric pressure.

First, barometric pressure within the cabinet, and, hence, upon both the pulmonary and cutaneous surfaces. Second, rarefaction, or

lowered pressure on both those surfaces. (Fig. 2.) Third, barometric pressure on the pulmonary and a lower pressure on the cutaneous surface (Fig. 3.) To obtain this, the patient takes the

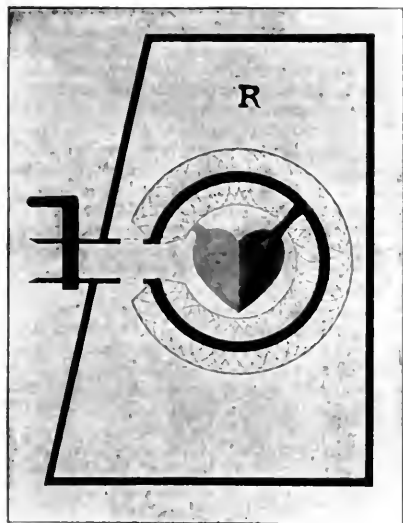


FIG. 2

breathing tube in his mouth with the lips tightly closed about it, the stopcock is opened, thereby connecting the lungs with the outside air, and rarefaction made within the cabinet. What, now, will be the effect of these different atmospheric pressures on the circulation? The last is the only absolute differential pressure, and we take that first. (Fig. 3.) Let us assume that the rarefaction in the cabinet is, say, one inch of mercury. This represents essentially a diminution of pressure over the entire cutaneous surface of one-half pound to the square inch. Thus, the patient, breathing through the tube from the outside, has normal or barometric pressure within the thorax, on the pulmonary vessels and on the outside of the heart, while that on the systemic circulation is one-half pound to the square inch less, or about five hundred pounds less in a foot. In other words, we have applied one huge drop to the entire systemic circulation, that is, one-half pound to the inch. It is obvious that the effect must be exactly that of a small one only manifested generally instead of locally. There will be therefore dilatation of vessels, lowering of blood pressure, and suction of the blood from the lung into the systemic vessels, thus giving hastened circulation, with less work on the part of the heart. The result is pulmonary anemia and systemic plethora, of a degree determined by the amount of differential pressure and the length of its continuance. With a rarefaction of two inches, three minutes' breathing

under these conditions will give the strongest man distressing dyspnea. The most striking illustration, however, of the power of this motion of the cabinet is in the almost immediate arrest of pulmonary hemorrhage. This motion may be used either with low rarefaction for two or three minutes, the patient breathing in and out through the tube; or with high rarefaction very briefly. For our present illustration we assume the latter, with a rarefaction of one inch of mercury. With this rarefaction the differential is maintained only while the patient takes a long, slow inspiration and a second or two after the inspiration ceases. This represents from six to ten heart beats, and in that time pulmonary hyperemia will be relieved and the systemic vessels filled, under lowered pressure. Now, at the end of such an inspiration, with mild pulmonary anemia and systemic plethora, the patient suddenly drops the breathing tube as the cock is closed, preventing any rush of air from without. The result is an immediate drop of pressure on the pulmonary surfaces from barometric to that within the cabinet. (Fig. 2.) This sudden change makes the absolute pressure on the two circulations the same; but, by reason of the weaker anatomical supports of the pulmonary vessels, it practically makes a differential pressure in favor of the lung, thus reversing the previous differential, and sucking the blood from the full systemic vessels back into the lung.

I always find this point the hardest to make clear: that lowered atmospheric pressure is the

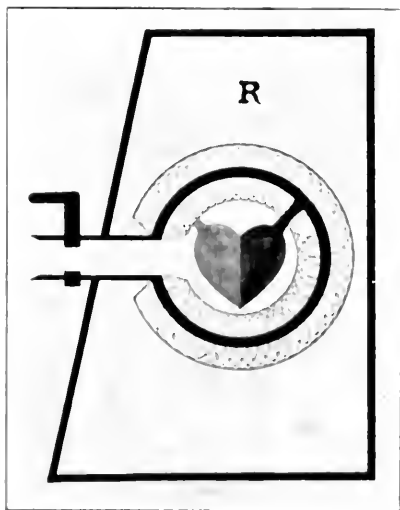


FIG. 3

only value of differential pressure in favor of the pulmonary circulation. Every one recognizes the effect of extreme rarefaction, manifested at very low altitudes. Every one admits that

the dyspnea, palpitation, bronchial and nasal hemorrhage caused by such altitudes are the result of vascular dilatation and intense pulmonary congestion. In view of this it is difficult to understand failure to recognize that the effect of milder rarefactions must be the same in kind if not in degree. It is obvious that the extreme vascular disturbance resulting from high rarefactions must be started with the first reduction of atmospheric pressure; and, indeed, it is a well-known fact that in ascending mountains one appreciates a gradually increasing oppression. It should, therefore, require but a moment's reflection to see that the slight rarefaction of the cabinet air is, so far as concerns the circulation, essentially a mild differential pressure in favor of the pulmonary circulation, which acts to draw the blood from the systemic vessels in precisely the same way that the previous absolute differential drew it from the lung into the general circulation.

We thus have the round of the circulation complete, with an alternation of differential pressures,—one drawing the blood out during inspiration, and the other drawing it back during expiration. The blood flow is thus maintained by mechanical forces acting in precisely the same manner as the physiological; which, at the same time, lower blood pressure and give rest to the heart and arterial muscles.

Let us now make the application to conditions of disease; and for this purpose I shall take a case of aortic incompetency as the simplest. With this lesion the first pathic increase of tension is in the ventricle during diastole, and its degree depends, so far as any controllable factors are concerned, upon the tension in the arteries. And these two tensions react to increase each other. Arterial tension driving the blood back during diastole causes ventricular dilatation; and the consequent increased amount of blood thrown into the arteries with systole produces a progressive increase of arterial tension, to continue the process of dilatation with each succeeding diastole. Now let us place a patient with this lesion in the cabinet and see the effect. As the cabinet is closed with the breathing cock open, the patient takes the tube in his mouth, and at once the cabinet air is rarefied. This gives the absolute differential pressure (Fig. 2), in favor of the systemic circulation, with these results: the vessels are dilated, arterial tension lowered, obstruction to heart action diminished, the work of the heart lessened, the force and amount of diastolic dilating reflux decreased, and, best of all, excessive ventricular tension removed, whereby the heart has opportunity to regain its tone and elasticity, and to restore its failing nutrition. If this differential be held only through a long, slow inspiration, pulmonary congestion will be relieved and the systemic vessels well filled. Then the tube is dropped and the cock closed. (Fig. 1.) At once we reverse the differential and with expiration suck the blood back to the lung. Thus the blood is hastened in its flow while arterial tension, aortic reflux, and both cardiac

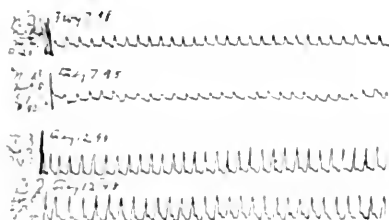
and arterial strain have all been lessened. A regular treatment consists simply in repetition of these motions; and no patient suffering from this lesion can take a dozen such breaths and not be conscious of relief. This motion, under which the patient, sitting in a rarefied air, inspires from without air at barometric pressure, *i.e.*, under a differential pressure favoring the systemic circulation, and expires into the rarefied air of the cabinet, I have termed "forced inspiration." It is the most powerful motion and may be used with rarefactions of from one to one and a half inches. It is liable, however, at first, to increase the distress of extreme pulmonary congestion with failing right heart. For such cases the proper beginning treatment is what I have termed "differential respiration." In this motion the patient both inspires and expires through the tube, thus maintaining barometric pressure on the lung, while only a slight rarefaction is made in the cabinet air, of from one fourth to one half inch. (Fig. 2.) The patient makes from six to a dozen or more respirations under this mild absolute differential, according to his strength; and then, to avoid the suction effect of rarefaction in increasing pulmonary congestion, as he drops the tube the cock is left open and barometric pressure is at once restored in the cabinet. In this way we gain all the cupping effect in relieving pulmonary congestion and lowering systemic tension and avoid increasing pulmonary congestion by not aiding the return blood flow.

The application of these two motions in the treatment of mitral insufficiency, aortic obstruction, and the various forms of cardiac degeneration should be obvious from what has already been said. It is equally plain that the cabinet is not adapted to the treatment of mitral obstruction. As much relief may be gained by its use even in that condition as from the Neuheim method, but it requires some special skill to avoid doing harm.

The natural criticism which comes at this point is this: Granting all that has been said to be true, a patient cannot spend his life in the cabinet, and the amount of relief which can be gained by any reasonable length or frequency of treatment can hardly be sufficiently great, or enduring, to make the treatment practicable. To this I should reply, "That is precisely what I thought at first." But even the most skeptical must agree that, whatever the nature of the cabinet action may be theoretically, its therapeutic value will be decided by the clinical results. It may help, however, to a fuller comprehension of those results if we recall for a moment the conditions under which the heart does its work and maintains its nutrition. While the heart is made to take up nutrition in very brief intervals of rest, the ability to take that nutrition depends upon the condition of the muscle cells themselves; and although these cells are made to endure rapidly repeated strains yet, if a certain limit is exceeded, they suffer what might be called nutritive paralysis; a paralysis analogous to that

of a voluntary muscle which has been kept constantly contracted for a long time. Now, we know that such a muscle, if allowed complete relaxation for even a short period, may be made to contract again for a considerable time. If

Pl. 6

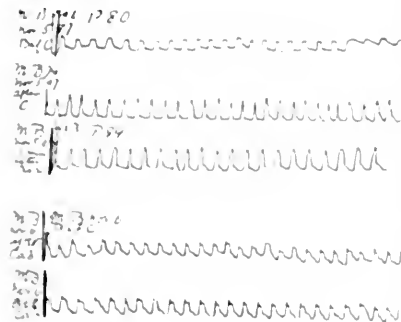


such short rest does so much to restore nutrition in a voluntary muscle, which requires long periods of rest for full repair, is it not fair to assume that twenty minutes' complete relief to heart strain is practically a very prolonged rest for a muscle that regularly gets its nutrition in such brief periods?

In support of the foregoing claims as to the value of this treatment, I desire to present first a few sphygmographic tracings. They are intended to show only the effects of the cabinet upon arterial tension.

In Plate T the first two tracings show the effect of the cabinet, which was not very marked or persistent, in a case of pure arterial fibrosis. The last three show a very decided effect, which was essentially permanent, in a case of mild arterial disease with moderate mitral reflux. Plate G, from a case of pure mitral incompetency, shows the effect of the cabinet in reducing the pulse rate at the first treatment, from 120 to 96

Pl. C



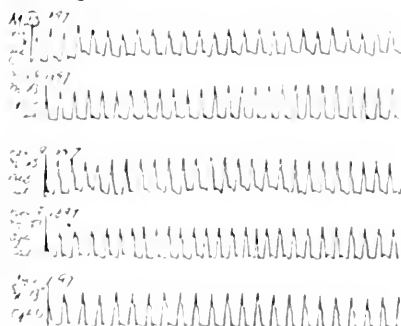
and the effect upon the amplitude of the pulse of five days' treatment. Plates C' and C'' are from a case of aortic regurgitation with slight chronic renal trouble. Their significance will be appreciated after reading the record on the

tracings of the time and manner in which they were taken. Plates H and B' are from cases 3 and 4 reported below. The first three tracings of Plate B' are especially significant and valuable showing, as they do, the immediate reduction of tension by the cabinet (tracing 2 compared with 1), and the effect upon the heart in enabling it to take up work after this brief complete rest. (Tracing 3 compared with 1.)

I shall report but four cases, and those as briefly as possible. They have been selected with the view of showing the failures of the cabinet, as well as the successes, so far as there is failure.

Jan. 10, 1906. Mrs. B., thirty-seven. Has had trouble with heart for eleven years since birth of only child. Two years ago became worse, and for past year has been very ill, suffering from the regular results of mitral leaking, with the back pressure on the abdominal circulation and liver. Large doses of digitals gave some relief, but is still in great distress

Pl. G'



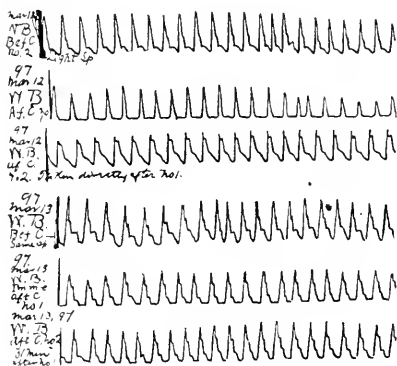
and can hardly walk across the room. E. and I have been taking 20 drops tri. Dig. every six hours, but has constant angina and severe pain in left leg. Examination shows thin, anemic woman, moderate edema of feet, considerable ascites, and large pulsating liver. These symptoms of back pressure are out of proportion to the dyspnea as respirations are only 24. Dyspnea is quickly increased, however, by the least exertion. Heart beats are 98 to the minute and some irregular. Pulse at wrist 114, and forearm 104 for tracing. There is about a 25% mitral regurgitation.

Digitals were continued and five or six small doses of chloral. Patient was kept at office, and given three treatments. The day after the third treatment, Mrs. B. could walk to the office for purpose with very low resistance, and the temperature was broken by two periods of rest. The patient was entirely relieved by the first of these treatments, and the respiratory trouble. At end of day patient said she felt better than for a long time.

Treatment was continued six weeks. On third day pulse began to show regular rhythm, and at end of third week it was constant and very regular, and was the only way restored by rest. In four days swelling of feet, all gone, but some abdominal enlargement. At end of third week there was no longer any abdominal ascites, and at the treatment the angina and heart debility had been cured.

decreased nearly three inches; but liver still pulsated. During third week patient gave up coming to office in carriage and walked to and from her room, a distance of nearly two blocks. Family reasons caused discontinuance of treatment. Soon after returning to her home in New Jersey she began to go backward, and has now lost about all she had gained. Cases like the above, in which the symptoms of back pressure in the abdomen are out of proportion to those in the lung, I regard as the most unfavorable for any treatment. Yet here, the cabinet gave immediate and progressive relief when all medication had failed. And such a case, if I understand it aright, is not fitted for the Neuheim treatment.

Pl. B"



The second case is quite different. Mr. M., age forty-two. Has had an aortic lesion since he was twenty-four. It caused him no great trouble until the spring of 1904, when, following severe muscular strain, he developed an intermittently persistent angina, of rather mild degree, which was associated with palpitation and much general discomfort. He consulted a justly prominent New York physician who diagnosed a double aortic murmur, put him on digitalis and told him that he would have to continue its use the rest of his life. The digitalis gave rather uncertain relief and did not prevent the anginal attacks, or much affect the general discomfort.

Examination, a year later (April 12, 1905) confirms the diagnosis as to the aortic lesion. Digitalis was stopped and patient put under cabinet treatment, which was given twenty minutes daily for a month. Result, entire relief, and the patient returned to his home in the Berkshires to live the life of country gentleman. In the year since, he has been in town three times for three or four days at a time and has then come in each day for a treatment. Beyond this he has done nothing and has been entirely well.

Case III is an extreme illustration of success and final failure through no fault of the treatment.

F. M., age thirty-five, was admitted to my service at the City Hospital on Dec. 13, 1904. The following is a brief abstract of his history: Fourteen years ago was in bed eight weeks with inflammatory rheumatism. Since then gradually increasing trouble from disturbed sleep, palpitation, shortness of breath, pains in limbs and swelling of feet. Was treated in Bellevue six years ago for heart trouble with all the above symptoms. Four weeks ago had acute attack at night; obviously an acute dilatation, with intense dyspnea

and angina. Feet swelled rapidly and all symptoms grew worse up to time of admission. Examination gives all the signs of extreme cardiac dilatation, with double aortic and double mitral murmurs, and a presystolic thrill. Patient can breathe only in sitting position, and any noise or disturbance in the ward starts an attack of angina and most distressing dyspnea. No medication affords relief except morphia, and this has to be given in frequent doses. The history notes, "Dec. 16, three doses of $\frac{1}{2}$. Dec. 21 to 28, $\frac{1}{4}$ every four hours. Dec. 29, $\frac{3}{4}$ gr. was required to relieve an attack. Dec. 30, small amount of fluid in abdomen; liver 5 cm. below ribs and tender; respirations 44; patient complains of great precordial distress; apex in sixth space past axillary line." The history continues unchanged with constant use of morphia, to Jan. 19, when a still further dilatation occurred, and every one thought the end had come. But he lived, and improved slightly until Jan. 25, when I had a cabinet in the hospital ready for use. On that date patient was taken to the treatment room and given fifteen minutes' treatment in short pieces. The effect on the circulation is shown in the tracings of Plate H. The pulse was reduced from 98 to 92; the systolic blood pressure raised from 140 to 150; and the diastolic from 60 to 110. The precordial pain and dyspnea were much relieved. Owing to inexperience of the staff and my inability to be at the hospital every day, treatment was not given daily, but every treatment gave obvious relief. Morphia was still required at times for the relief of angina, largely because the staff did not dare use the cabinet for that purpose. As they became accustomed to its use I directed that they should do so, and this note appears in the history for Feb. 5: "Patient found in very severe pain, with pronounced dyspnea; pulse rapid, tension high; with each spasm of pain the systolic sound at apex distinctly changed in pitch, becoming higher. Patient was taken to cabinet on stretcher. For the first five respirations the pain and dyspnea were very evident, and it was with great difficulty that patient could properly use the tube. After five respirations patient became suddenly better. Was given two sittings of five minutes each and was returned to the ward with the dyspnea entirely gone, the pain much relieved."

This experience was repeated several times until, owing to frequent disturbances in the ward, on Feb. 18 the patient was taken to a private room. From that time until his discharge on March 9, there was no medication except iron pills and the cabinet. He had no further attacks of angina or dyspnea, and, on leaving the hospital, said he felt better than he had in six years. This patient promised to call at my office for continuance of treatment. He did so the day after leaving the hospital, but from that time all trace of him has been lost, although persistent search was made at the address given. The history as given, however, is sufficiently striking and convincing as to what may be done with the cabinet.

The last case which I shall report is the first case of organic heart disease ever treated by the cabinet. In 1885 W. B., then twenty-eight years of age, suffered a severe attack of endocarditis and aortitis. Such recovery as he made was gained only after nine months' absolute rest, most of the time in bed, and left him with an extensive aortic insufficiency, but poorly compensated. He attempted to resume his business as a lawyer, but the frequent interruptions, incident to recurring attacks of acute dilatation soon compelled him to retire to the country, where he became interested in what has proven to be an immense enterprise. This he was able to carry, at first, because the work could be made to await his ability to do it. As the

demands on his strength increased, and became more imperative, however, the attacks of heart failure returned with increasing frequency and severity until, just as he was preparing to give up he was prostrated by an unusually severe attack and I was called to see him. This was seven years after his first attack, during which time he had been under the most competent medical supervision. He presented all the symptoms of extreme acute dilatation, following aortic insufficiency. The pulse was intermittent, irregular and uneven to an extreme degree. The heart gave loud double aortic and systolic mitral murmurs. He could not lie down, and even in the erect position angina was intense, while the throbbing in the head was almost worse. He had learned by sad experience that digitalis only increased the former as did glonoin the latter. My mental prognosis was speedy death, but in about two weeks he was able to walk slowly without exciting serious increase of cardiac irregularity. A few days later he received his first treatment by pneumatic differentiation, on Dec. 23, 1892. This was given daily for some two months and then daily when he happened to be in town, which varied from two days to two weeks at a time, with intervals extending up to a month when he had no treatment. In six weeks from the first treatment he resumed his business, which he continued despite constantly increasing burdens, for thirteen years, to the summer of 1905, with but a single relapse. For three years he took no vacation, but in the spring of 1896, after a winter of unusual strain, he asked permission to go abroad, to which reluctant consent was given. Although the voyage was smooth, by the time he reached London he felt the warning headache and called a physician who took him through a mild attack of dilatation. On recovery he consulted Dr. A. E. Sanson. By permission I quote from letters of Dr. Sanson and the attending physician, Dr. Edwards. The latter says, "Mr. B. came under my care April 26. He had a very threatening attack of heart failure, with intermittent systole at frequent intervals, often every third or fourth beat. Obvious evidence of aortic and mitral disease with constant regurgitation at the mitral and regurgitation at all kinds of pressure on the aortic valves. He has, of course, a heart which is permanently infirm and will at all times be gravely worsened by anxiety, worry or over work." Dr. Sanson says: "May 19, 1896. I have to-day examined your patient. I find evidence of hypertrophied left ventricle, some dilatation and hypertrophy of the right chambers, a fusiform dilatation of the aorta and abundant signs of obstruction and incompetency at the aortic valve orifice. The left ventricle has dilated to the production of the systolic murmur of mitral incompetency." Both physicians advised the patient to devote the remainder of his life to the study of botany. He reached New York the last of May. Within a week he resumed business, taking treatment constantly. The first of September he went to the country for a vacation, where he was under treatment, and by the end of the month his only murmur was the original aortic regurgitation, which had been the only murmur up to the time of his trip abroad. The disappearance of both systolic murmurs when treatment began in 1892 had similarly shown that they were purely dilatation murmurs.

Soon after this the patient made his permanent home in the country and installed a cabinet in his own house. At that time in reckoning up, he found that he was a director in 15 companies, secretary and treasurer of 5, all involving very large investments, and that, during the previous year he had spent, on the average, one night in every four on a railroad train. For the

next eight years he continued the same active life without any discomfort until the fall of 1901, when, at my regular fall examination, a new murmur was discovered, which, however, had caused no discomfort. It was a mitral systolic of entirely new character, which I believed was due to eccentric hypertrophy of the left ventricle, and of most serious import. Despite all warnings the patient neglected himself and insisted on marrying. This he did in February, 1905, and from that time until his death Sept. 30, the heart failure was steadily progressive. The only gross change in the heart, which weighed 23 oz., aside from the original aortic lesion, was hypertrophy, apparently limited absolutely to the left ventricle. This hypertrophy the pathologist of the City Hospital considered remarkable for the absence of all signs of inflammatory change.

If this were the only case I had to report, I feel that it would justify my claims as to the value of the cabinet treatment. For, while I am well aware that cases of aortic regurgitation often surprise us by their continuance, I do not believe that any such case, after a progressively downward course of seven years to the point of death, suddenly turns in six weeks under any other known method of treatment, and continues for thirteen years an uninterrupted course of health under increasing strain.

In conclusion and in summary permit me to say:

1. The pneumatic cabinet does not cure incurable organic heart lesions.
2. After nearly thirty years' observation and reasonably careful study of the results obtained by other methods, in the hands of acknowledged authorities, and fourteen years' personal experience in the use of the cabinet, I am firmly convinced that it affords more immediate, extensive, and lasting relief than any other known measure.
3. That its use is based upon such strictly scientific principles, and the results are so plainly determined by established physical laws, as to justify its description as the nearest approach to the ideal method of treatment in organic cardiac disease.

DEPLETION IN HEART DISEASE.*

BY FRED C. BRADLEY, M.D.

Jackson Professor of Clinical Medicine in Harvard University

ANSWER rest of the heart spells death. It must work. Rest is for it a relative term. Moreover, its work feeds itself as well as the rest of the organism. The treatment of a diseased myocardium, therefore, whether the disease is primary in the muscle or secondary to either a block at one or more of the valvular orifices or to impeded coronary circulation, falls into two main divisions, economy of work and efficiency of work.

It is my duty this evening to speak briefly on the first of these divisions: economy, which indirectly may be of great value, nay, indispensable, to efficiency, the direct means of securing which will be discussed by Dr. Pfaff. Economy

*Read at a Library Meeting of the Suffolk District Medical Society, Medical Section, March 28, 1906.

of work means such reduction in the demand for work as the particular case at a particular time requires — rest; it means also the removal of such conditions, mechanical or other, as impede the action of the heart. Of these conditions one of the most potent and frequent is dropsy, primarily a direct result of myocardial weakness and liable to be the cause of further weakness. At first and for a short time it is conceivable that the external dropsy, at least, should relieve the heart somewhat through the reduction of the volume of the blood. But such effect, if existent, can be, I think, only transient, the swelling of the tissues obstructing the return of blood through the thin-walled veins and capillaries while the supply of arterial blood is far less affected.

Cardiac dropsy, of course, never occurs until the right ventricle fails to meet the call upon it, and implies an overaccumulation of blood in the venous as compared with the arterial system. Certain it is that we always hail the diminution of cardiac dropsy as an indication of some gain in heart power, while we are careful not to mistake a mere shifting of the edema, due to gravity or other cause, for its real diminution.

Dropsy, then, indicating an overtaxed right ventricle and a surplus of blood on the venous side of the heart, such measures as tend mechanically to ease the right ventricle are clearly called for. These come under the broad term "depletion." Of these the most rapid and direct is the abstraction of blood, either by venesection or leeching or wet cups. There are cases in which blood letting, and that alone, can turn the scale. No one who has seen it can forget the effect — the gain in color and in breathing power with prompt increase in the urine and corresponding decrease in the dropsy — which may follow the abstraction of half a pint to a quart of blood. It may be wise to take more: but I have been struck by the apparent disproportion between the amount of blood taken and the relief given.

If leeches are used the hepatic region is a convenient place, and it is usually well to increase the bleeding by a poultice over the bites.

Next to bleeding comes purging and, outside of a hospital, usually preferable if there is time. Copious watery discharges are what is needed, and it has seemed to me usually worth while to explain to the patient that the drain does not weaken him save in so far as the necessary exertion may be tiring. The freedom of the purgation should, in the main, be proportional to the degree of dropsy. The serum drained from the blood through the bowel, is of course, promptly replaced from the tissues. One is far more apt to purge too little than too much. The choice of the agent is of less consequence than the production of the effect desired.

An ounce or two of Epsom salts in saturated solution in black coffee is often serviceable if the stomach will stand it. In some cases comp. jalap powder, elaterium or Croton oil is preferable.

Sweating may help in getting rid of the dropsy. It is best carried out in a cabinet, the patient

sitting up, as he cannot ordinarily lie down flat or long enough for the purpose.

The serous cavities can be tapped, often with great advantage, if they contain fluid in notable amount and other measures are not promptly efficient.

If edema of the legs be hard and brawny I have found Southey's tubes, modified, as to be presently described, helpful. A thoroughly sterilized aspirator needle or trocar of fair caliber can be thrust an inch or more upward into the subcutaneous tissue of the outer aspect of each lower leg or of the thigh, the skin having been previously carefully cleaned. The needle should then be packed around with sterile cotton or gauze in order to keep the skin as dry as is possible, and should be connected by rubber tubes with a bottle hung under the bed. I have thus drawn off 144 oz. of serum in twenty-four hours from one needle in each leg. The fine needles originally suggested by Southey seem to me to be too small.

The old practice of scarification I regard as dangerous having seen intense dermatitis and sloughing ensue from the constant maceration of the skin and the impossibility of adequate cleanliness. A physician should regard it as a reproach on the part of nature if he allows the legs to burst.

In dropsy in general, but above all in cardiac dropsies, diuresis is a result of action on the heart rather than directly on the kidneys. This certainly applies to the digitalis group. It seems to me that it also applies to diuretin which I have never seen of avail in purely renal dropsies, but which often greatly increases the flow of urine in cardiac dropsies. It has, indeed, seemed to me that the action or failure to act of diuretin on the urine in cardio-renal cases may determine the predominance of the heart or the kidney element at a given time.

Perhaps I do not use caffeine aright, but I have never got such results from it as the French report.

Apocynum cannabinum, on the other hand, has rendered me good service when other things have failed.

Calomel I give as a diuretic in doses of three grains every four hours for two or three days, usually uncombined with opium, special attention being given to the mouth to prevent salivation. I do not use calomel either as a purgative or diuretic unless I feel pretty clear that the kidneys are suffering from nothing more than passive congestion. As a rule, it does no harm; but, like arsenic and lead, mercury is largely excreted by and is an irritant to these organs. I have seen a single dose of calomel cause extreme salivation in nephritis and am, therefore, rather afraid of it. There are, moreover, other agents equally good for the purpose and more free from danger. Squills and calomel may enhance the effect of digitalis.

Finally, plain common sense dictates that the diet of a patient whom we are trying to relieve of cardiac dropsy by depletion should be as dry as

the features of the particular case permit. The blood mass is already larger than the weakened myocardium can manage and limitation of liquids is an important means of lightening the load.

THE USE AND ABUSE OF DIGITALIS.*

BY FRANK FAYE, M.D., BOSTON.

We owe most of our knowledge of the use of digitalis to English physicians living at the end of the eighteenth century.

William Withering introduced digitalis as a remedy into medical practice. He had heard that quacks used this plant in consumption and in dropsical conditions, and that repeatedly the latter were relieved by digitalis in their hands when regular medical treatment had failed. Withering decided to study the effects of digitalis preparations on his patients. In very carefully conducted experiments he came to the conclusion that digitalis was a powerful diuretic medicine, which often proved of greater value than other diuretics known at that time. He already knew that the strength of the different digitalis preparations differed according to the manner of compounding the same, and the season when the plant was collected. Withering, in his book, "An Account of the Foxglove, and some of its Medical Uses," gives us minute directions for preparing digitalis compounds and advises in what conditions they could be useful. He warned against their use in heroic doses, a warning based upon his own experiences and those of other English physicians, who had, in the hope of improving Withering's results, increased his doses manifold. On page 119 of his book we find the first case of digitalis poisoning described, which ended fatally. This description is the more interesting as it gives us a correct picture of the action of digitalis on the pulse in medicinal and toxic doses. In this special case the patient was treated by a physician in the Edinburgh Infirmary. In the beginning of the treatment digitalis was given according to Withering's teachings. "The urine began to flow freely on the second day, and on the third day the swelling of which the patient suffered began to subside. The dose was then increased more than quadruple. The pulse sunk to 50, but the urine increased in quantity. Still larger doses of the infusion of digitalis were ordered. The pulse sunk to 41, and at length to 35 in a minute. The patient gradually sunk and died, but previous to his death, for two or three days his pulse rose to near 100."

Withering knew only of the diuretic effect produced by digitalis; he was not aware of its pulse-reducing properties.

This action of digitalis was clearly demonstrated and expounded by John Ferriar in his "Essay on the medical properties of the digitalis purpurea." Ferriar says on page 299, "While it [digitalis] lessens the frequency and quickness of arterial contraction, it often increases at the

same time the secretion in the kidneys." "The diuretic power of digitalis does not appear to be a constant and essential quality of the plant; the power of reducing the pulse is its true characteristic."

Ferriar was the first physician who taught that the main action of digitalis was its characteristic one upon the circulation. It is true he was very much puzzled that digitalis could act as a sedative to the pulse, and at the same time as a stimulant to the urinary secretion, and he acknowledged frankly his inability to explain this phenomenon.

Ferriar laid great stress upon the importance of watching closely patients under digitalis treatment, and according to him "the patient's pulse must be examined from hour to hour." As to the dose of digitalis he very appropriately writes, "Let me observe once for all, that nothing is less accurately fixed in medicine than one of its most important objects, the doses of remedies. The proper dose of a medicine is undoubtedly that quantity which produces the effect required, whatever be its numerical denomination. A full dose of foxglove is, therefore, merely a relative term."

Withering and Ferriar and their associates studied digitalis experimentally on their patients. They experimented in most cases very carefully and taught us how and when to use this powerful remedy. In criticising their experimental results and deductions we must not forget that they lived before the time of auscultation and percussion and, further, when we consider their limited means of observing and controlling the results of their experimental work on their patients, we must regard their work as classical. An especially fine observer and sharp critic was John Ferriar who, besides his excellent empirical knowledge, was a very witty humorist in things medical.

These excellent empiricists could not, however, explain how digitalis acted and how it produced its effects; they saw only the results and did not understand how they were effected. It is interesting and at the same time instructive to hear Ferriar cry: "If any person were inclined to write a satire on medical evidence, the different testimonies respecting the properties of this single plant would furnish abundant material." "It is a diuretic," says one physician. "It has no diuretic power," says another. "It is a stimulant," says a third. "It is a sedative," cries another. "It has no properties at all," exclaims a fifth. What should the public believe?"

Ferriar's lamentation ought to ring in the ears of many a medical expert who is giving expert testimony. "What should the public believe?"

The action of digitalis, and its *modus operandi*, could only be found out with the advent of experimental research on animals. The results of these researches have explained the clinical observations made empirically by the English physicians; they make clear why in certain cases

* Read at a Library Meeting of the Suffolk District Medical Society, Medical Section, March 28, 1909.

of hydrops digitalis acted as a diuretic, and why in other apparently similar cases no increase of urinary secretions followed the use of this same remedy. The knowledge of the action of digitalis gives us a rational indication for its practical application, of its legitimate uses, and at the same time enables us to avoid abuses of this powerful remedy. Speaking of digitalis action I would like to add that the same remarks hold good for similar acting drugs, like scillain, strophanthin, convallamarin, etc. The main results obtained in experiments on cold and warm blooded animals or on the isolated heart of these animals showed that digitalis stimulates directly the heart muscle and the inhibitory apparatus of the heart in its central and peripheral parts. The result of this action is an increase of blood pressure, with an increase of pulse volume and a decrease in the pulse rate. With large (toxic) doses of digitalis we still see an increased blood pressure, but the pulse rate now rises. Later the pulse beats become irregular, and with fatal doses the circulation becomes finally paralyzed.

This is the usual way in which digitalis acts also on human beings.

The therapeutic effects of digitalis we seek in the practice of medicine are an increase of blood pressure with an increase of pulse volume, and a decrease in the pulse rate.

As soon as the pulse rate becomes increased it is a manifestation that we are getting the dangerous effect of overstimulation. Nevertheless, as with every drug, we may find in some patients deviations from the normal action. The knowledge of these abnormal occurrences will also prevent an abuse of this drug. In some people the vagus nerve does not respond to stimulation by digitalis and we see no reduction in the pulse-rate. The counting of the pulse alone will, therefore, give no light as to whether digitalis acts in such cases. In other instances the decrease in pulse rate may counterbalance the increased blood pressure, and the total work of the heart done in the time unit may be less than in ordinary cases. However, in other instances the heart's action may be already toxically influenced, the heart beat may be much increased in number and the pulse waves follow each other so rapidly that they have no time to reach the radial artery. A pulse count alone, if not controlled by auscultation of the heart, may lead to a misconception of the situation, and a new dose of digitalis may bring about paralysis of the circulation, before an increased pulse rate gives the signal of danger. As the main action of digitalis is to increase the blood pressure and so better to fill the arterial system, the rational indications for its use are clearly indicated. Digitalis may be used in all cases of abnormally low blood pressure and in all such pathological conditions in which some symptoms of the disease may be traced to an incomplete filling or emptying of the circulatory system. In the first place are, of course, to be mentioned all valvular diseases of the heart with failing compensation. To give digitalis in valvular disease of the heart

in which compensation is perfectly established by a corresponding hypertrophy of the heart muscle, is a gross abuse, but often practised.

The best results of the action of digitalis are, as a rule, to be seen in mitral and in aortic insufficiency. To get a good effect in aortic valvular diseases the quantity of the drug to be used has to be usually larger than in mitral diseases. In mitral stenosis and in recent valvular diseases, the effect of digitalis is generally not so marked. In myocarditis, dilatation of the heart, palpitation and pericarditis, digitalis may be used, but always with caution and close observation of the patient. Ferriar already advised the use of digitalis in palpitation of the heart, if the condition was not caused by dyspepsia or general nervous debility.

Recent experimental research on an isolated heart with irregular beats showed that if blood contained digitalis and was perfused through the coronary artery, the heart was made to beat regularly again, thus proving Ferriar's deduction.

The use of digitalis for diuretic purposes is, of course, only indicated when the lack of diuresis can be traced to circulatory disturbances. Other diseases in which digitalis may be indicated are especially furnished by disturbances in the lungs, hypostatic conditions, emphysema, pneumonia, etc., all cases in which the symptoms may be traceable to some impairment in the circulation. Knowing the action of digitalis, we know its use and can and must prevent its abuse, lest the patient suffer.

The old English physicians taught the use of digitalis; modern experimental science explained its action, and so taught a prevention of its abuse.

A BIOGRAPHIC CLINIC ON TCHAIKOVSKY.

BY GEORGE M. GOULD, M.D., PHILADELPHIA.

(Concluded from No. 19, p. 517.)

In the majority of cases of severe eyestrain, past or present, the discerning oculist finds a curious result that may be too easily and thoughtlessly passed over. It is the inhibition of thought and normal mental action which comes from the derouted and morbid ocular reflex. How frequently it is found that the sufferer sits staring with blank loss of power to concentrate his mind upon the task or the writing before him? There is a mysterious loss of imagination, an inability either to think or to execute. The intellect and creative faculty seem palsied. Tchaikovsky re-illustrates this inhibiting effect of ever-attempted but impossible ocular function:

I often sit for hours pen in hand, and have no idea how to begin my articles. I think I shall never hammer anything out; and afterwards people praise the fluency and ease of the writing! Remember what pains Zarembo's exercises cost me. Do you forget how in the summer of 1866 I worked my nerves to pieces over my First Symphony? And even now I often gnaw my nails to the quick, smoke any number of cigarettes and pace up and down my room for

long before I can evolve a particular motive or theme. (35.)

I am very well pleased with my musical work. As regards the literary side of it, I believe it will cost me some days of my life. I cannot describe how it exhausts me. How many penholders I gnaw to pieces before a few lines grow perfect! How often I jump up in sheer despair because I cannot find a rhyme, or the meter goes wrong, or because I have absolutely no notion what this or that character would say at a particular moment. (39.)

I no longer compose anything — a sure indication of an agitated mind. (41.)

From November, 1880, until September, 1881, Tchaikovsky wrote nothing. (Biog. 41.)

Inspiration will not come; every day I begin something and lose heart. Then, instead of waiting for inspiration, I begin to be afraid lest I am played out, with the result that I am thoroughly dissatisfied with myself. And yet the conditions of life are satisfactory: wonderful scenery and the society of those I love. (43.)

I notice that the older I grow, the more trouble my orchestration gives me. I judge myself more severely, more critical with regard to light and shade. In such a case the country is a real boon. (47.)

I have been sitting all day over two pages, yet they will not come out as I wish. (53.)

Not only will the individual or special task "not get itself done," as Carlyle said, but any work whatsoever, and the life-work itself, is inhibited and frozen in the attempt, and the loss of inspiration is here, as frequently elsewhere, painfully deplored.

But work will not come back to me. Rome and Roman life are too characteristic, too exciting and full of variety, to permit of my sticking to my writing-table. However, I hope the power of work will gradually return. (39.)

Oh, my God, if I could only find strength and gladness of heart for new works! Just now I can only go on patching up the old ones. (37.)

I believe I shall never write anything good again. I am no longer in a condition to compose. (41.)

If I were young, this aversion from composition might be explained by the fact that I was gathering my forces, and would suddenly strike out some new path of my own making. But, alas! the years are beginning to tell. To write in a naive way, as the bird sings, is no longer possible, and I lack energy to invent something new. I do not tell you this because I hope for your encouraging denial, but simply as a fact. I do not regret it. I have worked much in my time, in a desultory way, and now I am tired. It is time to rest. (42.)

Formerly I wrote as easily, and as much in obedience to the law of nature, as a fish swims in water or a bird flies. Now I am like a man who carries a precious but heavy burden, and who must bear it to the last at any cost. I, too, shall bear mine to the end, but sometimes I fear my strength is broken and I shall be forced to cry halt! (42.)

Annoyed with my failures. Very dissatisfied because everything that comes into my head is so commonplace. Am I played out? (41.)

No impulse for creative work. What does this mean? Have I written myself out? No ideas, no inclination? Still I am hoping gradually to collect material for a symphony. (48.)

Am I done for and dried up? Perhaps there is yet some subject which could inspire me; but I ought to

compose no more absolute music, symphony or chamber works. To live without work would weary me. What am I to do? Fold my hands as far as composition is concerned and try to forget it? It is difficult to decide. I think, and think, and do not know how to settle the question. In any case, the outlook has not been cheerful the last three days. (52.)

When he should have been at the acme of his creative power, he gave his best energies and care to a work which was at once recognized as without inspiration. He had hammered it out of a weary and inhibited and morbid brain, and he could not himself understand the reason of its ill success:

From the press I have encountered such hatred and hostility, that, even now, I cannot account for it. On no other opera have I expended so much labor as sacrifice; yet never before have I been so persecuted by the critics. (47.)

It is an undoubted *fiasco*. This failure has wounded me in my inmost soul, for I never worked with greater ardor than at *The Enchantress*. (47.)

The reason for the failure of *The Enchantress* must be sought elsewhere; possibly in the defective interpretation of both the chief parts; but more probably in the qualities of the music, which still awaits its just evaluation at the hands of a competent critic. (Biog. 47.)

In cases of severe eyestrain, whether in private practice, or as gleaned from the biographies of men and women of genius, one of the most appalling symptoms frequently found is hopelessness, despair, intense mental suffering, an irresistible feeling that life is worthless, and, although young, soon to come to an end. In Tchaikovsky's case, as was true in that of many others, it once reached the suicidal impulse. There are few minds than can sanely and successfully resist the lifelong insistence and maddening tendencies of continuous agonizing and mysterious disease. Note the age at which this despair occurs:

I cannot shake off the conviction that I shall not live long, and shall leave my symphony unfinished. (26.)

I am already very tired of life. (27.)

Tchaikovsky never gives the true reason for his yearning after solitude and a life of "heavenly quiet and serenity," but it certainly did not proceed from "misanthropy," "indolence" or weariness of life. (Biog. 27.)

What comes of it all? I am old and can enjoy nothing more. I live on my memories and my hopes. But what is there to hope for? (32.)

Boredom consumes us all, and the reason is that we are growing old. Yes, it is useless to conceal that every moment brings us nearer to the grave. (32.)

Misanthropic feeling comes over me, which has often hap-
pened before. It comes partly from my nerves, which sometimes get out of gear for no particular reason, and partly from the rather uncertain fate of my compositions. (32.)

The things which once seemed to him new and interesting now appeared more and more wearisome and unprofitable, and his moods of depression became more frequent, more intense, and of longer duration. (Biog. 33.)

You write of being out of spirits. Believe me, I am the same. (35.)

I am overcome by a sense of loneliness, of desolation. (35.)

In my life, too, there are days, hours, weeks, nay, and months, in which everything looks black, when I am tormented by the thought that I am forsaken, that no one cares for me. Indeed, my life is of little worth to anyone. Were I to vanish from the face of the earth to-day, it would be no great loss to Russian music, and would certainly cause no one great unhappiness. (36.)

In March and April he began to suffer again from mental depression. (37.)

The fact that we both suffer from the same malady would alone suffice to draw us together. This malady is misanthropy; but a peculiar form of misanthropy, which certainly does not spring from hatred or contempt for mankind. (37.)

At my age when one has nothing more to hope in the future. (44.)

After convalescence, which had lasted seven years, Tchaikovsky returned to all these activities with vigor and enjoyment, although after a time his courage flagged and all his strength of will had to be requisitioned to enable him to "keep up this sort of existence." Enthusiasm waned and there succeeded — in his own words — "a life-weariness, and at times an insane depression; something hopeless, despairing and final — and (as in every *finale*) a sense of triviality." (Biog. 44.)

Overcome with insane depression. (46.)

I sit at home full of remorse. The cause of my remorse is this: life is passing away and draws near to its end, and yet I have not fathomed it. (47.)

My absent-mindedness is becoming almost unbearable, and is a sign of advancing age. However, every one was surprised to learn that I was only fifty-one yesterday. Carnegie especially was very much astonished. They all thought, except those who knew something of my life, that I was much older. Probably I have aged very much in the last few years. I feel I have lost vitality. (51.)

I must confess to a morbid fear and horror, as though I were entering the kingdom of the dead and the world of those who had long since vanished. (52.)

... He says that had he remained a day longer in Moscow he should have drowned himself, and it is said that he did go so far, in his terrible depression, as to stand up to his chest in the river one frosty September night, "in the hope of literally catching his death of cold, and getting rid of his trouble without scandal." (Mason.)

Readers of the clinical biographies of other eyestrain sufferers have noticed the repeated occurrence of the fact that these so often have been compelled to work at a "white heat," with an intensity of emotion and recklessness of result that was itself morbid, and a certain indication of an underlying morbid cause. It was only thus that the nervous mechanism could be whipped and spurred to overcome the resistances and inhibitions of the balking mechanism of eye and brain. Again the case of Tchaikovsky illustrates:

I should feel quite happy and contented here, were it not for the morbid, restless need of hurrying on my work, which tires me dreadfully, without being in the least necessary. (43.)

In any case my mental condition has been very gloomy of late. The composition of the *Manfred* Symphony — a work highly tragic in character —

is so difficult and complicated that at times I myself become a Manfred. All the same, I am consumed with the desire to finish it as soon as possible, and am straining every nerve; result, — extreme exhaustion. This is the eternal *cercle vicieux* in which I am forever turning without finding an issue. If I have no work, I worry and bore myself; when I have it, I work far beyond my strength. (45.)

There are times when it seems to me it would be wise to cease from composing for a while; to travel and rest. But an unconquerable desire for work gains the upper hand and chains me to my desk and piano. (45.)

I cannot live without work, but why do circumstances always compel me to be in a hurry, to have to overtax my strength? (47.)

In the old — not the modern — text-books on "migraine," and in the case of every patient who has long endured this disease, it is noticed that there is a seeming contradiction of health and happiness almost synchronously, or quickly alternating, with the deepest agony and dejection. The following excerpts show the symptom reappearing in Tchaikovsky's case:

I have suffered all the winter, but my physical health is not in the least impaired. (35.)

More and more misanthropical. Imagine, now-days, I am often drawn towards my monastic life, or something similar. Do not fancy I am physically out of health. I am quite well, sleep well, eat even better. (35.)

Forgive me, dear friend, for boring you with these continual complaints about my health, which are out of place, for in reality I am a perfectly sound man, and the little ailments about which I grumble are not serious. (38.)

A splitting headache, and spent a wretched night. I recovered during the return journey to Petersburg, and to-day I feel quite refreshed. (39.)

My health is better. I have gone through such a terrible attack of nervous headache, I thought I must have died. I fell asleep so worn out, I had not even strength to undress. When I awoke I was well. (43.)

He was no longer a misanthropist, rather he sought those to whom he was dear, not only as a man, but as a personage. (44.)

When I am quite well — as I am at present — I am seized with a feverish thirst for work, but the thought of the shortness of human life paralyzes all my energy. (46.)

I was ill again after my last letter to you. This time I was so bad that I decided to send for the doctor. It seemed to me that I was about to have a strange illness. Suddenly I received a telegram saying that I must be at the rehearsal. I answered that the rehearsal was not to be thought of, for I could not travel. But at the end of half an hour I suddenly felt so well that — in spite of terrible disinclination — I went to Moscow. Every trace of headache, which for ten days had so affected me, vanished. Is not this a curious pathological case? (46.)

Complete success. Great enjoyment — but still, why this drop of gall in my honey-pot. (47.)

In this question lie the germs of that weariness and suffering which had their growth in Tchaikovsky's soul simultaneously with his pursuit of fame, and reached their greatest intensity in the moment of the composer's greatest triumphs. (Biog. 47.)

The work went easily, and his health was good. (51.) Increasing nostalgia and depression of spirits. (52.) I was taken so ill in the carriage that I frightened

my fellow-passengers by becoming delirious, and had to stop at Khar'ov. After taking my usual remedies and a long sleep, I awoke quite well in the morning. (52.)

This year, 1893, opened with a period of serene content, for which the creation of his Sixth, or so-called "Pathetic," Symphony was mainly accountable. The composition of this work seems to have been an act of exorcism, whereby he cast out all the dark spirits which had possessed him in the preceding years. (Biog. 52.)

At this time he suffered from a terrible attack of headache, which never left him, and threatened to become a chronic ailment. It departed, however, with extraordinary suddenness on the fourteenth day after the first paroxysm. (52.)

In spite of the discomforting news which met him in all directions, from the time of his return from England to the end of his life, Tchaikovsky was as serene and cheerful as at any period in his existence. (Biog. 53.)

I was very ill. (53.)

Just lately I have been dreadfully bored and misanthropical. I do not know why. I sit in my room and see no one but the waiter. I long for home, work and my normal existence. (53.)

He had never felt better or happier in his life. (Kashkin, 53.)

That the case of Tchaikovsky may in most of its phases illustrate the clinical picture of "migraine," as described by the careful observers of a past (not present) generation, one must add the frequently observed symptom of partial paralysis, or paresis:

At this time he was suffering from a nervous affection of the right hand, which made conducting a matter of considerable difficulty. (Biog. 51.)

In America the news that I could not go, because my right hand was disabled, reached them by cable, and they were very much upset. Now they are awaiting an answer — yes or no. (51.)

Yesterday I suffered so much that I could neither sleep nor eat, which is very unusual for me. I suffer not only from torments which cannot be put into words (there is one place in my new symphony, the Sixth — where they seem to me adequately expressed), but from a dislike to strangers and an indefinite terror — though of what the devil only knows. This state makes itself felt by internal pains and loss of power in my legs. However, it is for the last time in my life. (53.)

There is also found the usual phenomenon that the eyes, the original source of the entire train of reflex symptoms, only rarely show painful signs of the disease, and these but temporarily.

Another unpleasant experience took the form of an obstinate affection of the eyes, which hindered him from working regularly. (25.)

In spite of his eyes being affected and his constant change of quarters. (25.)

My health is good, only one thing troubles me a little — my eyesight, which is tried by my work. It is so much weaker than formerly that I have been obliged to get a pair of eyeglasses, which I am told are very becoming to me. (32.)

There are ninety-nine cases of atypical "migraine" to one that some writers call "typical." I have omitted many references and others have

been given in previous pages, to the complaint of headaches, neuralgia, neuralgic headaches, etc., scattered through the letters and life of Tchaikovsky. Severe eyestrain will usually result in some form of cerebral disorder or ache, or in "bad digestion," "dyspepsia," "catarrh of the stomach," etc. The latter class of disorders are persistently complained of by Tchaikovsky. For instance:

Suffering from a form of dyspepsia. (37.)

I wish some one could explain to me the origin of that curious exhaustion which comes upon me almost every evening, about which I have already written to you. I cannot say it is altogether disagreeable, because it usually ends in a heavy, almost lethargic sleep, and such repose is bliss. Nevertheless the attacks are tiresome and unpleasant, because of the vague anxiety, the undefinable yearning, which take an inconceivably strong hold upon my spirit, and end in a positive longing for Nirvana — *la souffrance*. Probably the cause of this psychological phenomenon is of quite a prosaic nature; I think it is not so much a mental ailment as a result of bad digestion, a sequel of my catarrh of the stomach. Unluckily we cannot get over the fact that the material influences the spiritual! (38.)

In spite of the greatest care and moderation, I suffer from dyspepsia. It is not serious, and I have no doubt a cure at Vichy will completely set me up. (46.)

One wonders if a certain number of cases of alcoholic dissipation are not being constantly caused by the nervous disorders and irritations due to eyestrain. The note is not wanting in Tchaikovsky's case.

Since the day you left I have taken several glasses of brandy at night, and during the day I drink a good deal. I cannot do without it. I never feel calm except when I have taken a little too much. I have accustomed myself so much to this secret tipping that I feel a kind of joy at the sight of the bottle I keep near me. I can only write my letters after a nap. This is a proof that I am still out of health. (48.)

A careless or prejudiced critic might think that Tchaikovsky's melancholy and ill-health were largely due to his ill success in life and as a musician. The following excerpts will answer:

The people around me often wonder at my fortuitous and my apparent ill-temper, while actually I do not lead an unhappy existence. What more can a man want whose prospects are good, who is liked, and whose artistic work meets with appreciation? (27.)

I assert that life is beautiful in spite of everything! This "everything" includes the following items: illness, I am getting much too stout, and my nerves are all to pieces. (30.)

He realized his wild dreams of fame, and attained to such prosperity and universal honor as rarely fall to the lot of an artist during his lifetime. (Biog. 47.)

Physically neither better nor worse than in former years, possessing the unlimited affections of those whom he loved in return, — he was, to all appearance, an example of mortal happiness, yet in reality he was less happy than before. (Biog. 47.)

And the secret grew keener, as his weakness grew more intolerable. The more he accustomed his temperament to unsuitable occupation, the further he advanced his reputation, the more complete was his

disenchantment with the prize. Radiant and glittering as it had appeared from afar, seen closer, it proved insignificant and tarnished. Hence the profound disillusionment, "the insane depression," the something "hopeless and final" which make so dark a background to the picture of his brilliant success at home and abroad. (Biog. 47.)

That the nonsensical word, *hysteria*, may not be used, Tchaikovsky replied in advance:

To my regret, however, you seem to see what is good for me precisely where I — and several others — see what is inimical to my health; in the very thing which appears to me an unprofitable and aimless exertion. . . . All you have written to me, and also your manner of saying it, only proves *how little you know me*, as I have frequently observed on former occasions. Possibly you may be right, and I am only *putting it on*; but that is precisely the nature of my illness. (38.)

Another ancient and humorous superstition had also to be illustrated:

His first impressions of Vichy, whither he had been ordered by his physician, were far from favorable, but the local physician persuaded him to remain at least long enough for a "demi-cure," from which he derived great benefit. (35.)

Tchaikovsky now resembled those individuals who do not recognize the true cause of their sufferings, and, therefore, have recourse to the wrong treatment. (Biog. 35.)

The sole object of the journey mentioned in this letter was to take a cure at Vichy. The catarrh of the stomach from which he suffered had been a trouble to Tchaikovsky for the last twenty years.² Once, while staying with Kondratiev at Nizy, the local doctor had recommended him *Natron* water. From that time he could not exist without it, and took it in such quantities that he ended by acquiring a kind of taste for it. But it did not cure his complaint, which grew worse and worse, so that in 1876 he had to undergo a course of mineral waters. The catarrhal trouble was not entirely cured, however, but returned at intervals with more or less intensity. About the end of the eighties his condition grew worse. Once during the rehearsals for *Pique Dame*, while staying at the Hotel Rossiya, in St. Petersburg, he sent for his brother Modeste, and declared he "could not live through the night." This turned his thoughts more and more to the "hateful but health-giving Vichy." But the periods of rest after his various tours, and of work in his "hermit's cave," at Klin, were so dear to him that until 1892 he could not make up his mind to revisit this watering place. This year he only decided to go because the health of Vladimir Davidov equally demanded a cure at Vichy. He hoped in this congenial company to escape his usual homesickness, and that it might even prove a pleasure to take his nephew abroad. (Biog. 52.)

To complete the sketch these paragraphs may be added:

"I was shocked at his appearance," he writes, "for he had aged so much that I only recognized him by his wonderful blue eyes. A man old at fifty! His delicate constitution had suffered terribly from his incessant creative work." (Door, 51.)

² Who has not seen correction of errors of refraction relieve so-called bilious attacks, periodical vomiting, anorexia, indigestion and other gastric symptoms? Prof. John H. Musser, Jour. Am. Med. Assoc., Nov. 4, 1905.

But this was probably the fatal moment in his indisposition, for, while talking, he poured out a glass of water and drank a long draught. The water had not been boiled, and they were dismayed at his imprudence. But he was not in the least alarmed, and tried to calm their fears. He dreaded cholera less than any other illness. After this his condition grew worse, but he attributed all his discomfort to a copious dose of Hunyadi which he had taken earlier in the day, and still declined to send for his favorite doctor, Bertenson. (Biog. 53.)

Death occurred on Oct. 25 (Nov. 6), at the age of fifty-three.

And why this death at the age of fifty-three? It is not an explanation to say that it was due to cholera, even if one admits the correctness of the pretty evidently false diagnosis. This feeling is expressed by his brother, who wrote:

As at the beginning of the sixties, when he chose a musical career, and in 1885, when he resolved to "show himself in the eyes of the world," so also at this juncture, we are conscious of a feeling that *things could not have gone on much longer*. (Biog. 52.)

His death, which came to solve the problem, seemed fortuitous. Yet it is clear to me that it came at a moment *when things could not have gone on much longer*; nor can I shake off the impression that the years 1892 and 1893 were the dark harbingers of a new and serene epoch. (Biog. 52.)

Despite the smiles of the neurologists, or diagnosticians who care not for the forty years of functional disease which preceded anatomic pathology, or the irresistible impact of infectious disease, the explanation of Tchaikovsky's death lies in the lifelong preparation of the "soil" by eyestrain, doubled now by presbyopia. The lethal diseases are in truth often but the executioners of long precedent functional disorders. Imitating a foolish science, his biographer explains the life disorder by the ancient but still living superstition of "heredity":

His one certain inheritance seems to have been an abnormally neurotic tendency, which probably came to him through his grandfather Assier, who suffered from epilepsy.

His grandfather was an epileptic, and his own symptoms pointed to an inherited nervous irritability. (Mason.)

Tchaikovsky also echoed the nonsense that still spoofs about the professional and biographic mind:

My nerves are poor, but this cannot be helped, and is not of much consequence. Whose nerves are not disordered in our generation — especially among our artists? (32.)

If this theory seems to the unobservant to have some ground when applied to musicians and literary workers, it may be suggested that no sign of "nerves" and "migraine" is found in Brahms, Mozart, Verdi, Mendelssohn, Goethe, Mommsen, Gladstone, and thousands of others in similar callings. Then the sculptors and painters and actors are also "artists," and one will seek almost in vain for the symptoms of eyestrain in these three classes of men.

In the midst of the perplexity, mystery and pain of his life, like Parkman, Carlyle and the majority of such sufferers, Tchaikovsky was struck with the tormenting puzzle of the nature of his life ailment, and he wrote as follows:

Dear friend, leading such a life, amid all these beautiful impressions of nature and art, ought not a man to be happy? And yet a worm continually gnaws in secret at my heart. I sleep badly, and do not feel that courage and freshness which I might expect under the present conditions. Only for a moment can I conquer my mental depression. My God! What an incomprehensible and complicated machine the human organism is! We shall never solve the various phenomena of our spiritual and material existence. And how can we draw the line between the intellectual and physiological phenomena of our life? At times it seems to me as though I suffered from a mysterious but purely physical malady which influences my mental phases. Lately I have thought my heart was out of order; but then I remembered that last summer the doctor who examined it declared my heart to be absolutely sound. So I must lay the blame on my nerves—but what are nerves? Why, on one and the same day, without any apparent reason, do they act quite normally for a time, and then lose their elasticity and energy, and leave one incapable of work and insensible to artistic impressions? These are riddles. (10.)

This is a genuinely scientific questioning, and millions of other sufferers in the last and in the present generation might have found the easy and simple key to the mystery, an easy and now well-known solution of the "riddles," and the relief of their torments, if the medical profession had exhibited the same or a slightly better logical and clinical acumen.

Reports of Societies.

LIBRARY MEETING OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

MEDICAL SECTION, HELD MARCH 28, 1906.

CHAIRMAN, R. C. CROSBY, M.D.; SECRETARY, L. A. LOCKE, M.D.

THE following papers were read:

DR. FREDERICK C. SHATTUCK.

THE USE OF DEPLETION

DR. FRANZ PFÄFF.

THE USE AND ABUSE OF DRUGS.¹

DR. CHAS. E. QUIMBY, New York.

PNEUMATIC DIFFERENTIATION.²

DR. FRANCIS B. KINSIGHT, New York.

THE NAUPEIN TREATMENT.³

DISCUSSION.

DR. VINCENT Y. BOWDITCH. I shall confine myself in this discussion solely to Dr. Quimby's paper on pneumatic differentiation in disease of the heart. About twenty years ago, Dr. H. L. Williams introduced the pneumatic cabinet to the profession as a

means of making topical applications to the lungs in cases of pulmonary disease. At that time I investigated the subject and experimented with the cabinet in cases of phthisis. I soon came to the conclusion that as far as topical applications to the lungs was concerned the instrument was practically of little value, but I knew that as a means of pulmonary calisthenics it had decided merit and, to make a long story short, we have had two in use at the Sharon Sanatorium as a means of encouraging deep breathing, accompanied by the inhalation of some soothing vapor as a palliative for irritated throats and bronchial tubes. That the instrument is of decided benefit for such purposes we have no doubt. It should be said, however, that the method of using the cabinet has been, up to a comparatively recent date, somewhat different from that described by Dr. Quimby.

With its use in heart lesions I have had no personal experience, but in the past few years I have become much interested in his work and have been deeply impressed by the results in one case which I had the privilege of seeing and examining a few years ago when in New York.

This gentleman previous to his treatment by Dr. Quimby had been pronounced a hopeless invalid by at least two eminent specialists, one in England and another in America, and he was apparently doomed to a life in the country away from all excitement or active life. Not long after his treatments in the pneumatic cabinet were begun, he began to improve, and far from being a comparatively useless invalid he became the chief pillar of a great establishment at Niagara Falls, undergoing tremendous drains upon his time and strength without difficulty, apparently, just so long as he was able to take occasional treatments in the cabinet, which always gave him relief from the circulatory disturbance which occasionally appeared consequent upon failure of compensation in severe valvular disease of the heart. When I saw the gentleman, he was in the midst of active work a few years after his first treatments. Upon examination I found evidences of a greatly enlarged heart filled with tremendous murmurs, indicative of at least aortic and mitral regurgitation. He told me his history, and spoke most warmly of the relief he had experienced from the cabinet and of the fact that he always had one near him with a trained assistant who could give him the treatment when necessary. I was deeply impressed by that case, and have been following Dr. Quimby's work, in somewhat desultory fashion, I am sorry to say, but with great interest, believing that he has found a comparatively simple but most effective method of relieving some of the most distressing symptoms of valvular disease followed by lack of compensatory power.

Wishing to get the opinions of others who had investigated the subject recently, I have recently written to and received answers from three physicians who have followed Dr. Quimby's work and who have tested the merits of the cabinet. With your permission I will now read some short extracts from these letters, after I have given the testimony as of much weight.

MARSHALL S. A. J. HOSKIN,
WATKINS ISLAND, NEW YORK, U.S.A.

MARCH 11, 1906.

Dear Dr. Quimby:—When I was called to the Hospital at the University, I saw the first of the pneumatic cabinet, and after the series of treatments that I saw was given, I was pretty sure that it was a valuable means of treatment. I have since had a very fine examination of a patient who had an attack of valvular disease. A cabinet was used, and certainly

¹See p. 549.

²See p. 551.

³See p. 543.

⁴See p. 539.

striking, especially the effect on the intensity of the murmur; there were about thirty cardiac cases on the service, seven or eight of which were given treatment, three of which were continued over a fairly long period. . . . The blood pressure is taken before entering and after leaving the cabinet with a Janeway instrument. In several cases sphygmographic tracings were made from the radial pulse.

The treatment was used on cases of cardiac disease of the mitral or aortic valves either alone or both lesions present in the same case. Regurgitant lesions were the type of valve disease.

The most important results of the treatment were:

(1) The blood pressure was reduced, as a rule, to about 10 to 20 mm.

(2) The respirations became immediately more comfortable and less labored.

(3) The circulations were equalized.

(4) The precordial pain was almost instantly relieved and the oppression removed.

(5) The murmurs at first very loud and harsh—in the cabinet being easily heard at a distance of 8 to 10 feet—became softer and softer until in some cases they disappeared completely for a time.

One case I remember distinctly, who failed to respond to the usual therapy with bed rest, who had mitral and aortic regurgitant murmurs with immense dilatation, heart measuring at least 25 cm. from the right to left border, the man weighing about 130 pounds. He suffered most severe spasmodic precordial pain that morphine relieved very little, and progressively failed until he seemed only a few hours from death when the cabinet treatment was given.

Almost instantly his attacks of precordial pain ceased and his dilatation diminished rapidly and he was comfortable in twenty-four hours. He continued to do favorably, heart becoming smaller and smaller for the following month when he suffered from an acute dilatation as a result of a struggle with a neighboring patient who was alcoholic and suddenly became destructive. Before this time he received treatment for twenty minutes each day. After the acute dilatation his anginal attacks returned and he was given the cabinet whenever he had an attack of cardiac pain—in the night or in the day. The pain always subsided immediately on the administration of the treatment, his blood pressure was diminished, his circulation was equalized in the two circulations, the lesser and greater, he breathed more easily, and usually slept comfortably afterwards. From this attack he recovered in about ten days.

The patient was a young man, *chef* by occupation, arteries were soft and no other kidney disturbance than congestion.

The treatment was used in simple mitral and aortic regurgitant cases where the arteries were not seriously involved and the kidney was not markedly changed. Their recovery seemed to me to be more rapid than similar cases treated either with ordinary vaso-dilators or with a cardiac tonic (digitalis) and a vaso-dilator. Their comfort after the treatment, their easier respiration, their more gentle blood pressure, their murmur much diminished in intensity, at times disappearing for a few minutes to an hour or two, their relief from cardiac pain when morphine practically failed, were the points that impressed me favorably.

I did not find that it was of special use in cardiorenal disease where a valve leak occurred more or less accidentally, but in cases of cardiac disease with no kidney or arterial complications the results were impressive. I don't mean to say that the cardiac rest afforded by the cabinet would do the cardiorenal cases no good,

but they are very much more unfavorable cases and the beneficial results were very much more transitory.

It required a patient of rather above the usual charity hospital type to co-operate perfectly in the treatment, hence the cases were selected. I observed no ill effect in any case whatever and fail to see how any accident could occur if the treatment was carefully applied.

This idea of varying the pressure on the two circulations in cardiac valvular disease is original with Dr. Quimby, so far as I know. Crile has tried the same thing, though instead of reducing the peripheral pressure he increased the pulmonary pressure by supplying air under increased pressure by means of a rubber bag, a method varying much in pressure from time to time and being crude and uncomfortable in application. He experimented more with surgical cases, I believe, and did not observe whether or not variation in this manner of applying different pressures to the two circulations had any effect in cardiac disease.

ALBERT H. GARVIN, M.D.

CITY HOSPITAL, BLACKWELL'S ISLAND, N. Y.

Dear Dr. Bowditch: As regards my experience with the pneumatic cabinet, I can say I have found it to act favorably, almost magically, in aortic cases with associated severe anginas. I saw one patient in collapse from the severity of the angina pains, breathing laboriously, rapid, high tension pulse, who, when placed in the cabinet for ten minutes under one inch of mercury, came out free from all pain, breathing easily, and blood pressure reduced from 30 to 50 mm. On daily treatment, this man left the hospital in a month, apparently as well as ever.

In all cases of valvular disease with associated high tension, I have found the cabinet to act very favorably.

I have noted good results from its use in slowly resolving alcoholic pneumonia without an associated valvular lesion. It produces coughing, an expansion of the most dependent alveoli, with the result that expectoration becomes profuse and the condition clears up rapidly.

I have only seen one case that was apparently harmed by its use, and that only for a day. This was a case of aortic regurgitation, it being a question, however, whether this was a functional murmur or valvular, in which there was associated exophthalmic goitre. After one exposure of ten minutes, he was seized with tachycardia and in the next twenty-four hours had thirty-two distinct attacks, varying in duration from one to twenty minutes, with a pulse uncountable. Treatment by cabinet was discontinued and it did not recur.

I trust my small contribution may be of some value to you. I candidly think that there is more in the cabinet treatment of cardiac and lung diseases than the medical profession in general have to date admitted.

EDWARD F. CROFUTT, M.D.

NEWARK, N. J.

Dear Dr. Bowditch: . . . As to my case: A man forty-two years of age, who for fourteen years had suffered more or less constantly with disturbed compensation, with frequent pronounced failures requiring hospital treatment which consisted in, certainly, rest and, probably, digitalis and glonoin. Each of his recoveries required weeks of time, and compensation was never completely restored; cardiac sleep was short; edema of the ankles, dyspnea and palpitation on slight exertion remained. He entered the City Hospital

in a severe attack of broken compensation, the usual treatment as outlined above was established, but the patient's condition was such (marked hypertrophy and dilatation of both right and left heart; double aortic murmurs, presystolic and systolic mitral and pulmonary systolic; rapid arrhythmic and high tension pulse, orthopnea, marked edema of ankles, hydrothorax and angina) that no surprise was felt at his steady decline. No doubt of his early dissolution was felt; in fact, so certain of it was the junior assistant that he made out the blank form of consent to autopsy in anticipation of seeking relatives the next day.

But with an abiding faith in the adage, "Where there is life there is hope," active stimulation was begun and he responded, to be returned to a condition that was little better than the original, giving no relief to the patient. In the course of a few days he showed a slight improvement from very active stimulation, but we felt it was the question of but a very short time before the break.

Dr. Quimby was, I am sure, very doubtful of results, but he decided to try the cabinet. But from the first sitting the patient showed a steady improvement. I have carried him on a stretcher to the cabinet when he was suffering intense agony, angina and urgent dyspnea, which heroic doses of morphine and glonoin would not influence in the slightest, and when by great effort only he was able to use the tube; and the end of ten minutes' treatment would return him to his bed so absolutely transformed as to amaze his ward mates and attendants, and the apparent change was supported by sphygmographic record. Within three weeks he was sleeping prone, and within six weeks insisted that his improvement entitled him to leave the institution. We were not yet ready to discharge, but did so upon his promising to return to Dr. Quimby for office treatment. He declared upon leaving that no previous recovery had been so satisfactory to him. During the whole course of cabinet treatment his only medication was Bland's pills.

As compared with the ordinary drug treatment of such a condition the results attained required less time and were of a more satisfactory nature, and, according to the cases Dr. Quimby has been able to follow, more permanent. Such an advantage, it seems to me, is a valuable accession to therapy. As we approach the simple we draw near to the ideal. Certainly, no one could require a more beautiful theory than that which governs "pneumatic differentiation," applying as it does the simplest law of physics, and the theory has been sustained practically by numerous cases at Dr. Quimby's hands. At least, I have yet to hear an answer to the question I have put to skeptics. "Given a real and serious condition such as the cabinet is aimed to treat, no other treatment except rest in bed being used, — an every case I have seen was certainly beyond rest alone, — results actually brilliant follow, if the cabinet did not accomplish it, what did?"

I saw no bad results following its use. I can imagine none in a suitable case, the only contra-indicating condition, as I understood it, being mitral stenosis without dilatation. In my opinion two very important preliminary steps are first, the education of the patient to a thorough understanding as to what he shall do, second, assurance of the patient of the perfect safety of the apparatus, which to the lay eye is undoubtedly formidable, and a heart case particularly fears suffocation. The cabinet does look stuffy, and the bolts and bars probably make the uninitiated dubious as to his ready escape if necessary.

The only unsatisfactory cases we had were those whose stupidity made them unable to understand what they were to do and those who could not be

assured of their perfect safety. In both these classes of cases some harm may have been done, but probably only temporarily. In the first type their bungling efforts to use the tube resulted in fatigue and irregular action of pressure. The second counteracted any good that might have been done by their great excitement.

I greatly regret that I am unable to add anything more of evidence, but I feel very anxious to support that in which I have the greatest interest and confidence.

C. L. GAUSDE, M.D.

I should not be so foolish as to pretend to be anything of an expert on the physics of this method of treatment. I must leave that to others more competent. But in studying Dr. Quimby's papers on the subject his theories have seemed to me sound and founded upon simple laws. Had I not seen one case that was most impressive, and had I not had the testimony of competent witnesses in other cases, I should have felt, very possibly, the skepticism that we all feel to a greater or less degree when any new and surprising method of treatment is urged upon us. We all know, however, that the results of experimental and laboratory research are often strangely and disappointingly at variance with clinical experience.

In these cases, however, Dr. Quimby's theories and his clinical experience seem to go hand in hand. I do not doubt that he has made his mistakes, possibly; I think it perfectly possible that in some cases there may have been failure to accomplish all that was desired. I have yet to learn of any great harm coming from the use of the cabinet; but even if such an unfortunate occurrence should ever take place, should that deter us from its use, any more than we should decline to use morphine or sulphuric ether because of occasional unfortunate results from their use?

All I ask now is, that before judgment is given the matter may be investigated and not put aside, as too often happens from fear of disaster or upon theoretical grounds alone. I am glad to say that there are two of these instruments in the city, and I sincerely trust that some of us will feel sufficient interest to thoroughly study the theoretical and clinical aspects of the subject.

I personally feel grateful to Dr. Quimby for what he has taught us, and trust he will keep bravely at the work which, in my belief, he a great boon to sufferers from certain forms of heart disease.

Dr. QUIMBY. — I am very glad of the opportunity to say something of the treatment of heart disease outside my own subject. Unfortunately, those who are interested in any special form of treatment are too often given credit for knowing nothing about other methods. I would be the last to ignore other forms of treatment of heart disease. The cabinet does not preclude others, in fact they may give relief where the cabinet fails. In general I believe it to be applicable to all forms of cardiac diseases with the possible exception of tobacco heart. It is of the greatest value in the cardiac and circulatory disturbances of old age. In cases of anemia of the brain it may increase the sense of weariness and vertigo, but only temporarily.

Dr. KISSICUT. — Dr. Quimby is very familiar with my appreciation of his splendid work with the pneumatic cabinet in the treatment of heart disease. In many cases I have seen most gratifying results following its use, but I do not know of any other form of treatment it has not a universal application.

I am very glad to hear what Dr. Piffard has advised concerning the use of digitals, and especially his advice that it be given in cases of aortic regurgitation. It is my experience that in the failing compensation of aortic regurgitation digitals is of the greatest benefit.

Recent Literature.

Materia Medica and Therapeutics, an introduction to the Rational Treatment of Disease. By J. MITCHELL BRUCE, M.A., LL.D. (Hon.), Aberd., M.D. (London). Fellow of the Royal College of Physicians of London; Consulting Physician to Charing Cross Hospital and to the Hospital for Consumption, Brompton, etc. New and enlarged edition, revised throughout and containing the Indian and Colonial Addendum to the British Pharmacopœia. Forty-seventh thousand. Chicago: W. T. Keener & Co. 1905.

The book contains the usual statements concerning *Materia Medica*, but is chiefly therapeutic in its scope. The author has adopted a special arrangement in the description of special therapeutics in systematically tracing the action and uses of different drugs from their first contact with the body to their elimination in the secretions. Under General Therapeutics, the action and use of drugs are grouped under the physiological systems (digestive, respiratory, etc.). To the present edition has been added an account of the *Materia Medica* and Therapeutics of drugs in the Indian and Colonial Addendum to the British Pharmacopœia and greater detail in the chemical and pharmaceutical relations of individual drugs.

Because of lack of conformity to the United States Pharmacopœia, the book is less suitable for use in the United States. In general it is to be recommended as a reliable and useful manual.

Materia Medica for Nurses. By JOHN E. GROFF, Ph.G., Apothecary in the Rhode Island Hospital, Professor of *Materia Medica*, Botany and Pharmacognosy in the Rhode Island College of Pharmacy. Third edition revised, with an appendix giving list of questions for self examination. Based upon the eighth decennial revision of the United States Pharmacopœia. Philadelphia: P. Blakiston's Son & Co. 1905.

The book is well arranged, well written and contains the essential facts for the nurse concerning drugs and their uses.

The Detection of Poisons and Strong Drugs. By DR. WILHELM AUTEURIEU, translated from the third German edition, by WILLIAM H. WARREN, Ph.D. Pp. xii, 222. Philadelphia: P. Blakiston's Son & Co. 1905.

This very admirable laboratory handbook presents in sufficient detail the various methods of detecting all of the common and many of the less common poisons, and of determining quantitatively the important alkaloids and certain other active principles of drugs in common use. It is a most valuable contribution and cannot fail to be greatly appreciated, not only by students but by specialists in toxicological work.

Textbook of Insanity Based on Clinical Observations. For Practitioners and Students of Medicine. By Dr. R. VON KRAFFT-EBING, late Professor of Psychiatry and Nervous Diseases in the University of Vienna. Authorized translation from the latest German edition by Charles Gilbert Chaddock, M.D., Professor of Diseases of the Nervous System in the Marion-Sims-Beaumont College of Medicine, St. Louis, Mo., etc., etc. With an Introduction by Frederick Peterson, M.D., of New York. Pp. xvi, 638. Philadelphia: F. A. Davis Company.

Although this translation of Krafft-Ebing's once famous work is a posthumous one, no student of psychiatry, however wedded he may be to the latest doctrines in mental disease, can fail to find much of the teaching of this master-mind instructive and altogether profitable. His extraordinary insight put him in advance of his time in knowledge of the subject and enabled him to expose some of the traditional fallacies regarding mental disease, its mechanism, etc. His handling of cases is thorough and eminently practical, and his account of them shows the close observer, original thinker, and resourceful physician — the highest type of clinician. The absence of the more recent tenets as to disease-processes, etc., which have done so much to simplify our understanding of insanity, deprives the work of full value to the student of to-day as an up-to-date textbook, but it should, nevertheless, be most helpful for collateral reading and reference on account of the author's minute analysis of the various mental states and his sound and original views on a variety of points in a most comprehensive study of the subject.

The translation, though a trifle involved in style here and there, is, on the whole, excellent.

Hygiene and Public Health. By B. ARTHUR WHITELEGGE, C.B., M.D., B.Sc. Lond., F.R.C.P., D.P.H., and GEORGE NEWMAN, M.D., D.P.H., F.R.S.E. Tenth edition, revised, enlarged and in great part rewritten. Pp. 636. Chicago: W. T. Keener & Co. 1905.

Although this little book has reached its tenth edition and shows evidence of revision, in that it contains fairly numerous references to recent discoveries, it is hardly suited to the needs of American students, practitioners and health officers. It is constructed on purely British lines and includes, therefore, the usual exposition of the public health acts and by-laws, for the multiplicity and impossibility of practical enforcement of which Great Britain is justly celebrated. The chapters on Air and Meteorology are fairly satisfactory, but those on Water, Soils and Foods not only are accorded insufficient space but contain many statements which are not in agreement with ideas generally accepted as sound and authoritative. In general, it may be said that important subjects receive very inadequate treatment and unimportant ones undue consideration. The work can hardly be regarded as worthy of the traditional place on the specialist's table.

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**OPENING OF LABORATORIES OF THE
ROCKEFELLER INSTITUTE.**

At the formal opening of the laboratories of the Rockefeller Institute, on May 11, the previously announced program was carried out. Dr. Holt, the secretary of the Board of Directors, gave a sketch of the preparatory work accomplished and the plans for the development of the Institute in the future. He said that many applications had been received from England, France and Germany for staff places, but that it had been decided to train Americans for such positions. Resident fellowships and scholarships would provide the requisite material. At present the working staff would consist of fourteen members, divided among the various departments, while the laboratories would provide facilities for fifty students. In time a hospital on the grounds would be indispensable, in order that the researches carried on might attain their highest usefulness, and it was also the design of the Institute to co-operate with the New York Health Department and all other active agencies for the suppression of disease. "We hope to have the money and the men of science," he said, "to cope with all emergencies threatening the public health."

The president of the Board, Dr. William H. Welch of Johns Hopkins University, in his brief but admirable address, expressed the opinion that the Institute would place America high in rank with France, Germany and Great Britain as regards research work in scientific medicine. President Eliot, of Harvard, and President But-

ler, of Columbia University, also spoke. Mr. Rockefeller was not present, but was represented by his son, John D. Rockefeller, Jr.

President Eliot devoted himself to the scientific investigator. In his opinion, however it might be in theology, in science there is no such thing as final truth. The scientific investigator is a law unto himself. The institution in which he works merely supplies him with facilities and he does the rest. His work is secret, but the results are made public and mankind gets the benefit. More than that of any other man his labor is for the public welfare, for the cure and prevention of disease.

President Butler referred to the significant fact that the Institute was situated in the midst of a dense population of a kind which would receive the greatest benefits from its work. Institutions like the Rockefeller would foster in the public mind the respect for science. Pasteur believed that the neglect of science and scientific work lay at the bottom of the defeat of France by Germany in 1871. The conduct of the recent war against Russia by the Japanese was to his mind a plain proof of the value of scientific training. The value of accurate thought and well considered action was a lesson which Americans especially needed to learn.

The Institute, as it stands to-day, represents an outlay of \$3,000,000. The grounds cover, in all, twenty-six and a half city lots, which were formerly a part of the old Schermerhorn farm on the banks of the East River. The present laboratory building, which is situated on an eminence, is five stories high and constructed of buff brick and sandstone. Its architecture is severe but dignified, and its equipment is the most complete possible, all the air admitted to the building is filtered and the interior is dust-proof throughout.

Every facility is afforded for research in the departments of pathology, bacteriology, physiology, physiological and pathological chemistry and comparative zoology.

The Institute not only carries on experiments in its own laboratories, but awards money grants to those who are engaged in medical research elsewhere. The results of investigators' work is published, if deemed worthy of publication, in the *Journal of Experimental Medicine*, which is issued by the Institute. The board of directors consists of Drs. William H. Welch of Baltimore, president; T. Mitchell Prudden of New York, vice-president; T. Freemon Hall of New York, secretary; Christian A. Herter of New York, treasurer; Simon Flexner of New York, director

of laboratories; Herman M. Biggs of New York and Theobald Smith of Boston.

It is said that at the dinner given in the evening by President Welch at the University Club, Mr. Carnegie grasping the hand of young Mr. Rockefeller, exclaimed, "The two Institutes, Rockefeller and Carnegie, against the World!"

It is sufficiently evident that this country will not suffer in the future for want of facilities for research, and we trust men will arise to accept the privileges which are now being so freely offered.

THE PREVALENCE OF SCABIES.

THE attention of readers of this JOURNAL has several times been called to the prevalence of scabies in this community, and to the frequency with which it goes undetected and apparently unsuspected by the practitioner of medicine. There seem to be no signs of abatement in this prevalence, and the number of cases presenting themselves at the various hospitals during the last two years has been greater than ever. As an instance of this prevalence may be cited the fact that at one of our large out-patient clinics the number of cases of scabies treated during each of the last two years exceeded that of any other skin disease, with the sole exception of eczema. These figures represent simply the individuals applying personally for relief; for in a large majority of instances a history of a number of additional cases in the same family could be obtained. In some instances families of from ten to twelve people were found to be affected at the same time.

It is well known that scabies came into prominence during the Civil War, when opportunity for its transmission was offered by the housing of troops in barracks and tents and their intimate association with one another. The disease then became much less frequent for the succeeding fifteen years until the increasing rush of immigration began to pour into America the diseases hitherto almost monopolized by the Old World. Still more recently the Spanish War has swelled the numbers, and the affection seems to have become pretty well established in our country, fed, as it is, by the enormous immigration.

Of late years, since the affection has increased so rapidly, the better classes have begun to be subject to it, and it is no great rarity to observe the disease in private practice, among the most cleanly and well-cared-for people. The possibility of scabies should never be excluded in any

pruritic affection, solely on the ground of the patient's social position or habits of cleanliness. It is here that a serious error is frequently committed, and people who could be easily cured in a few days by proper treatment are allowed to drag on a pruritic existence, because their symptoms are ascribed to error of diet or to some internal irregularity. It is true that in the more cleanly the most typical appearances are somewhat masked. The pictures in the atlases of fingers and hands covered with crusts and burrows, and the body, from the neck to the knees, the seat of excoriations and crusts are not duplicated in the more cleanly. But a little experience, such as the well drilled medical student of to-day is favored with, will enable the observer to come to a correct decision in a large majority of cases. In the beginning, and as an axiom, scabies should be at least thought of in every case where itching is a prominent symptom, and not obviously due to other causes, with utter disregard to the social position or habits of cleanliness of the patient. Next, the nocturnal nature of the itching should be considered as suspicious. Scabies, by reason of the habits of the female acarus, in preferring warmth for her activities, torments its object especially at night. This is not a pathognomonic sign but one of considerable importance. The localization of the cutaneous lesions, represented by excoriations due to scratching, papules, vesicles and pustules, such as are seen in a dermatitis from different causes, is a most important diagnostic sign, perhaps the most important sign; certainly so in cases that admit of any doubt. These localizations are the hands, especially the inner sides of the fingers, and wrists, the folds of the axillæ, the penis in men, and about the breasts in women. It should be emphasized that burrows are not to be found in a large proportion of cases, especially in those of cleanly habits, so that a failure to find burrows is of very little negative value. In the male the occurrence of one or more papular infiltrations upon the penis, especially if elongated and not round, is a sign of great importance, as such lesions in this position almost never occur in any affection which might be confounded with scabies. It will be seen, therefore, that scabies presents a sufficient number of diagnostic signs to warrant its recognition in the majority of instances, and that its prevalence and occurrence among the better classes render its consideration imperative in any pruritic affection of doubtful etiology.

ARE SURGEONS SCAMPS?

It hardly seems worth while to dignify the twaddle which Mr. Bernard Shaw lately indulged in before the British Union for the Abolition of Vivisection by a reference to it. In criticising the attitude of the medical profession toward vivisection he is reported as saying that when "it was a question of earning sixty guineas in an afternoon it was a very strong temptation to a man who could do that by performing an operation to believe that an operation was necessary, where it was not necessary. That he did not think it was good public policy for any person to have a strong pecuniary interest in mutilating his fellows. He did not desire to say that the surgeon actually knew that an operation was unnecessary, but if they gave a man sixty guineas to believe a thing he would have a strong disposition to believe it."

In other words, men sometimes yield to temptation. What truth there is in this is a platitude of the most ancient description. What has it to do with antivivisection? Shall we advocate a law that surgeons shall not operate or shall not be paid for operating? Even surgeons are neither impeccable nor infallible. But we have heard more and more bitter criticisms for failure to operate than for too keen operative zeal. Guineas or no guineas, the question is undoubtedly at times a hard one to decide. On the whole, we believe the layman is at least as safe in trusting his medical adviser as in trusting his lawyer, his banker, his clergyman or even his rationalistic philosopher. "Lead us not into temptation, but deliver us from evil," is part of a good old prayer which was in use before the brief day of "Mrs. Warren's Profession," and there has been no desire to abolish it since.

RETIREMENT OF DR. HENRY P. BOWDITCH.

By the retirement of Dr. Henry P. Bowditch from the faculty of the Harvard Medical School the university loses from its active teaching force one of its most conspicuous and distinguished members. Dr. Bowditch has served the Medical School as one of its teachers for thirty-five years during that period he has seen his special department, physiology, develop both here and elsewhere, in a way which could not have been foreseen when he began his work. It should be a lasting source of satisfaction to Dr. Bowditch to feel how large a part he has played in this development, a fact which has been generously recognized abroad as well as in this country. He retires from active work at a time when the

Harvard Medical School is about to enter a wider field of usefulness, owing in no small measure to his efforts in her behalf. It is not to be expected, however, that his retirement from active teaching will preclude the possibility of his counsel in the problems which are immediately facing the Medical School, and in this capacity we trust he may have many years of usefulness. Well earned as his rest may be, it will be received with regret by his colleagues with whom he has long been associated in the best development of medicine in all its branches.

THE GOVERNOR'S VETO OF THE TYPHOID BILL.

For vetoing the pernicious measure, not inaptly termed "the typhoid bill," which provided for practically unrestricted use of the waters of certain of the great ponds of the Metropolitan water supply for purposes of pleasure Governor Guild deserves the thanks of every citizen and the warmest commendation of every member of the medical profession. This bill, which would have made possible the most serious and the most dreaded forms of pollution, was rushed with unnecessary and indecent haste through both branches of the legislature, without opportunity for debate, and great pressure was brought to prevent a veto; but the Governor, recognizing the danger of trifling with the public health merely for the gratification of the few, was equal to the emergency and Massachusetts will continue to enjoy its well-earned prestige in the fields of water supply and protection of the public health.

MEDICAL NOTES.

DELAYED ISSUE OF INDEX MEDICUS. The Carnegie Institution of Washington, Washington, D. C., announces that the issue of the Index Medicus has been unavoidably delayed, owing to recent printers' strikes. For this reason, the Index Medicus for March, 1906, has not as yet been published, nor has it been possible to complete work on the index to the volume for 1903.

Urgent measures are being taken to relieve the situation, however, and it is hoped that an end to the trouble will soon be reached, and that the work of publication will be resumed on its regular basis.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON.

For the week ending at noon, May 16, 1906, there were reported to the Board of Health of Boston the following cases of acute infectious diseases:

Diphtheria 41, scarlatina 35, typhoid fever 7, measles 85, tuberculosis 35, smallpox 0.

The death-rate of the reported deaths for the week ending May 16, 1906, was 19.45.

BOSTON MORTALITY STATISTICS. — The total number of deaths reported to the Board of Health for the week ending Saturday, May 12, 1906, was 226, against 230 the corresponding week of last year, showing a decrease of 4 deaths and making the death-rate for the week 19.80. Of this number 126 were males and 100 were females; 218 were white and 8 colored; 133 were born in the United States, 87 in foreign countries and 6 unknown; 46 were of American parentage, 148 of foreign parentage and 32 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 44 cases and 1 death; scarlatina, 28 cases, 1 death; typhoid fever, 12 cases and 2 deaths; measles, 101 cases and 2 deaths; tuberculosis, 49 cases and 12 deaths; smallpox, no cases and no deaths. The deaths from pneumonia were 29, whooping cough 5, heart disease 28, bronchitis 5, and marasmus 10. There were 15 deaths from violent causes. The number of children who died under one year was 48; the number under five years, 79. The number of persons who died over sixty years of age was 43. The deaths in public institutions were 73.

There were 3 cases and 3 deaths reported from cerebrospinal meningitis during the week.

BEQUESTS. — By the will of the late Dr. Charles M. Cumsten, of Monmouth, Me., the Carney Hospital in Boston receives \$15,000, somewhat restricted during the life of one person. By the will of the late Miss Clara E. Hillyer, of Hartford, Conn., the Hartford Hospital receives \$50,000.

MIDDLESEX EAST DISTRICT MEDICAL SOCIETY. — The annual meeting of the Middlesex East District Medical Society was held in Red Men's hall, Stoneham, Wednesday afternoon, May 9, and the following were elected officers: President, Harrison G. Blake, Woburn; Vice-President, Corydon W. Harlow, Melrose; Secretary, Harold Gale, Winchester; Treasurer, Charles Dutton, Wakefield; Councillors, G. N. P. Mead, Winchester; F. E. Park, Stoneham; S. H. Parks, Reading; Robert T. Edes, Reading; Arthur H. Cowdrey, Stoneham; Censors, F. E. Park, Stoneham; Mott A. Cummings, Winchester; George F. Dow, Reading; Ernest S. Jack, Melrose; William H. Keleher, Woburn; Auditor, Lilley Eaton, Winchester.

NEW YORK.

DR. ALBERT VAN DER VEER, MEMBER OF BOARD OF REGENTS. — Dr. Albert Van der Veer, of Albany, has been elected a member of the Board of Regents, University of the State of New York, to fill the vacancy left by the death of Dr. George R. Fowler, of Brooklyn.

STEVENS-WAINWRIGHT BILL. — The lower house of the state legislature adjourned without passing the Stevens-Wainwright bill, requiring medicinal preparations containing alcohol or other narcotic or potent drugs to have labels giving their constituents, which had been passed by the Senate. In the Assembly the bill was killed by amendments. It is gratifying to learn, however, that the Assembly failed to pass the osteopathy bill, which had also been passed by the Senate.

EXTERMINATION OF MOSQUITOES. — Governor Stokes has signed the "mosquito bill," which was passed by the New Jersey Legislature a few weeks ago. Under its provisions an appropriation of \$350,000, \$50,000 of which is to be expended annually for seven years, is available for the purpose of exterminating mosquitoes. State Entomologist Voorhees, it is announced, has already perfected elaborate plans for carrying on the warfare, and the work will be begun immediately.

APPOINTMENT OF DR. CHARLES W. PILGRIM. — Governor Higgins has appointed Dr. Charles W. Pilgrim, at present superintendent of the Hudson River State Hospital for the Insane at Poughkeepsie, president of the State Commission in Lunacy, to succeed Dr. William Mabon, and the appointment has been confirmed by the state senate. Dr. Mabon has received and accepted the position of superintendent of the Manhattan State Hospital, on Ward's Island, made vacant by the death of Dr. Emmet C. Dent.

REVOCATION OF MILK LICENSES. — The Appellate Division of the New York Supreme Court has just handed down a decision upholding the authority of the Health Department to revoke licenses for the sale of milk. The action calling forth this decision was a suit for \$30,000 damages brought by the Metropolitan Milk and Cream Company against the department, because the latter had revoked its license for the sale of milk in New York City. The department alleged that the company maintained a dairy in Orange County which was in an unsanitary condition, and also that it had shipped to New York milk

which had been watered and adulterated. Consequently, the department revoked its license, and the company claimed that this procedure was without legal authorization.

MEDICAL RELIEF COMMITTEE FOR SAN FRANCISCO PHYSICIANS.—The New York Academy of Medicine, the Medical Society of the County of New York, and the Richmond County Medical Society (of Staten Island), acting in concert, have appointed a medical relief committee to raise funds for the physicians of California who have suffered losses in the recent disaster. The societies of Kings and Queens, Nassau and many other county medical societies are also engaged in the work of relief.

AN UNFORTUNATE DECISION.—In a most extraordinary decision, handed down on April 23, United States Commissioner Ridgway has ordered the discharge of Dr. W. H. Hadley and those other defendants concerned in the "Force of Life" company, who were indicted some time ago, under charges made by the counsel of the County Medical Society, for fraudulently using the United States mails in maintaining a quack medical institution in New York. Notwithstanding all the evidence to the contrary which was presented, the commissioner expresses the opinion that there was nothing to show that the company employed fraudulent or deceptive means in the conduct of its business. He even goes out of his way to state that such methods of treatment exert "a benign influence in the community."

MORTALITY.—The weekly reports of the Health Department show that the mortality in the city during the month of April represented an annual death-rate of 19.79, as against 20.15 in March and 20.20 in April, 1905. Among the diseases in which there was a diminished fatality were the following: The weekly average of deaths from diphtheria and croup decreased from 53.5 in March to 43 in April; the weekly average from influenza, from 9.5 to 6; from pulmonary tuberculosis, from 191.25 to 182.75; from acute bronchitis, from 41 to 31.25; from pneumonia, from 170.5 to 161.5. Among the diseases in which there was an augmented mortality were the following. The weekly average of deaths from typhoid fever increased from 5.5 to 7.75; from scarlet fever, from 11.75 to 14.75; from epidemic cerebrospinal meningitis, from 21 to 29.25; from diarrheal diseases in children under five years of age, from 35.75 to 38.5; from cancer, from

53.25 to 58.25; from organic heart diseases, from 109 to 117.25, and from Bright's disease and nephritis, from 125 to 127.25. While the weekly average of deaths from measles was practically the same as in March, during the past month there has been a progressive decline in the mortality of this disease. In the first week of April the deaths from it numbered 72, and in the last week, 39. The mortality from bronchopneumonia continues high (considerably higher, in fact, than in the winter), and this is no doubt attributable to the severe epidemic of measles, which is now on the decline. In the fourth week of April there was one death from smallpox, the first that has been recorded during the present year. The corrected death-rate, excluding non-residents and infants under one week old, was 18.44, as against 19.07 in March.

A NEW HOSPITAL FOR TREATMENT OF DEFORMITIES.—A new hospital, to be conducted under Jewish auspices, which was licensed by the State Board of Charities in October last, is to be opened on June 1. It is to be devoted to the treatment of deformities and joint diseases in accordance with the Lorenz methods, and will occupy a dwelling-house of three stories and basement on upper Madison Avenue. The director will be Dr. Henry W. Frauenthal, who has had a large experience in orthopedics at Bellevue Hospital and as the assistant of the Sayres, father and son; and on the consulting staff will be a number of prominent surgeons. The dispensary staff will consist of twelve physicians, and in connection with this department nurses will be supplied, when necessary, to look after patients in their own homes.

DELAY IN CONSTRUCTION OF NEW BELLEVUE HOSPITAL.—The construction of the new Bellevue Hospital is at present delayed on account of a conflict of views between the State Board of Charities and Dr. John W. Brannan, president of the Board of Trustees of Bellevue and Allied Hospitals. According to Dr. Brannan's plan, which has been approved by the city officials, the new hospital would have 2,400 beds, and the State Board is opposed to the erection of hospitals with more than 1,000 beds, believing in smaller institutions and more of them. Some time ago Commissioner Stewart of the State Board demanded the plans of the new institution, on the ground that under the law, the Board's approval was necessary before the construction of the new buildings could be begun; but Dr. Brannan, contending that Bellevue did

not come under the jurisdiction of the State Board, because it had been separately established by the legislature, refused to submit them. The State Board then laid the matter before Attorney-General Cunnene, who was at the time in office, and he wrote an opinion deeking against Dr. Brannan's contention. Recently the present attorney-general prepared an opinion still more decided in favor of the State Board, and, as a result, Dr. Brannan has called on Corporation Counsel Delany for advice and support. The latter states that so many delicate legal points are involved that the entire matter will have to go to the courts before a settlement can be arrived at. This resort to the courts will shortly be made, as Attorney-General Mayer is now preparing mandamus proceedings against Dr. Brannan, the result of which will be to decide the issues at stake.

Correspondence.

CONTRIBUTIONS FOR PROFESSIONAL BROTHERS IN CALIFORNIA.

Boston, May 14, 1906.

Mr. Editor: I enclose a letter which may interest you and your readers, from Dr. Wallace I. Terry, president of the San Francisco Medical Society.

The \$300 from the Norfolk District Medical Society, which he refers to, was increased by \$100 from the Brookline Medical Club, and by \$7, individual contribution. These sums, aggregating \$407, were sent to Dr. Terry before receipt of his letter.

In addition to the above, the Suffolk District appropriated \$500, the Essex North District \$200 and the Bristol South District \$100.

If this is brought to the attention of the other districts in the state, they may be inclined to add their contributions.

Very truly yours,

GEO. W. KAN, M.D.

PRESIDIO SANITARY DIVISION, SAN FRANCISCO, CAL., May 5, 1906.

DRS. G. W. KAN, G. W. CLEMENT, S. CROWELL AND MEMBERS OF THE NORFOLK DISTRICT OF THE MASSACHUSETTS MEDICAL SOCIETY:

Gentlemen, — Your letter of April 25, 1906, to Dr. R. F. Rooney, president of the Medical Society of the State of California, stating that you had appropriated \$300 "for the California sufferers, and preferably for the medical fraternity" was forwarded to me as president of the San Francisco County Medical Society.

On behalf of all the physicians of San Francisco, numbering about one thousand four hundred, I wish to sincerely and gratefully thank you for your generosity. The immensity of this city's loss is difficult to realize even by those of us who are here, and fully one thousand physicians have lost their offices and equipment. Outside of that their greatest difficulty will be in making a living for the next year until the city is partially rebuilt and the refugees come back.

I have appointed a committee of nine representative men who will take charge of the relief of physicians without regard to school or other affiliations. I would respectfully request you to send your timely contribution to Dr. T. W. Huntington, chairman of the Finance Committee, Lane Hospital, San Francisco.

Later we shall request the medical libraries of this country to aid us in the formation of a new library as that

of the County Society as well as many private ones were swept out of existence by the fire.

We shall ever be under a deep debt of gratitude to our fellow members of the medical profession for their immediate thought of us in our distress.

Again with thanks, I remain,

Yours very truly,

WALLACE I. TERRY, M.D.,

President, San Francisco County Medical Society.

ERRATUM.

Boston, May 9, 1906.

Mr. Editor: Please correct an error in figures on page 511, in my address to the Boston Medical Association, published in your issue of May 10. The Register of the Massachusetts Medical Society for 1905 gives 858 members in greater Boston. I wrote 627, but I included only the Suffolk District. The new ratio would give one regular physician to about 700 inhabitants instead of one to 1000.

Truly yours,

DAVID W. CHEEVER, M.D.

LETTER FROM LISBON.

THE INTERNATIONAL MEDICAL CONGRESS AT LISBON.

(SPECIAL CORRESPONDENCE.)

Lisbon, April 22, 1906.

Mr. Editor: The most noticeable thing in going to the International Congress at Lisbon was the absolute carelessness of the railroads as to any adequate arrangements. Spanish railroads anyway are the slowest things on record. The distance from Seville to Lisbon is about three hundred and forty miles. It took us twenty-four hours to make the trip, and we had to change cars three times. It was known that there would be quite a number going to the congress from Seville, but no provision was made. There were no sleeping cars and no restaurant cars. There are no toilet arrangements on Spanish cars. When a stop of a few minutes is to be made at a station there is a general rush for the "lieu d'aisance." The first comers usually have the worst of it, for the next rows do not wait their turn but use the floor as a urinal. The closets are mere squatting places with sometimes a foot place that is not covered with filth.

The contrast at Lisbon was very agreeable. All arrangements had a room in the station where they told arriving congressists where the rooms were to which they had been assigned, and changed their money to the Portuguese coinage. Portuguese beds and furniture were not always to the taste of the outsider, who generally preferred a softer bed and more luxury, but the places were clean and conveniently situated. Those who were fortunate enough to get into the larger hotels had every luxury.

Lisbon is a charming city and a clean one. The streets are wide, and parks and squares are frequent. The presence of tropical trees gives a certain charm which would otherwise be lacking, in spite of a multitude of other handsome trees on the wide avenues and squares.

The place of meeting for the congress was the new school of medicine, a large and splendid building, eminently well fitted for the meetings of the many sections, and furnishing rooms for general meeting. The post and telegraph had a special room in the building for the benefit of the members. There was an abundance of uniformed attendants to see to the wants of everybody. No one without a member's ticket was allowed in the building. The opening exercises were conducted under the special auspices of the King and Queen in the great hall of the Royal Geographical Society, a hall reminding one of the Boston Symphony Hall. There was a most brilliant assembly from the court as well as members of the congress. The King read a short speech of welcome in a clear voice that could be distinctly heard throughout the hall. On one side sat his charming wife and on the other the queen mother. At the conclusion of his address he declared the Fifteenth International Congress of Medicine as opened.

There followed a tiresome lot of speeches by the representatives of the different governments. The speakers with only a few exceptions could not be heard twenty feet from the platform. The Frenchman and the Italian, however, made eloquent addresses which called forth applause. The royal band furnished the music.

The most noticeable phase of the congress was the

by the city at the handsome Hotel de Ville was enhanced by an exhibition, in the square, of the city fire department. To us Americans also of special interest and enjoyment was a dinner given by the United States minister, Mr. Charles Page Bryan. He is an ornament to his position. He not only gave us all a most hearty welcome, but together with his secretary, Mr. Chandler, of Brookline, went out of his way to assist us in any and every manner.

The real work of the congress was not neglected in the meantime. There was, however, nothing very new brought out. Synphysiotomy was entirely discredited, the newest operation of high, cutting the iliac bone, taking its place. A suprapubic, extraperitoneal Cesarean operation was recommended by Dr. Frank, especially in septic cases. The American operation for fibroids was indorsed.

In the department of national medicine there was much discussion about yellow fever, doubt being expressed as to mosquitoes being the only cause of the fever. Considerable interest was manifested in the discussion on tuberculosis. A campaign of general public education by posters and object lessons, such as have been given in Boston, was advocated.

There were about twenty-five Americans present, among whom were, Dr. Wise of the Navy, Dr. Richards of the Army, Dr. Seign, Dr. Gutierrez, Dr. Van der Veer, Dr. Furck and Dr. McDonald, of New York; from Boston, Dr. Washburn, and Dr. Chase with his moving pictures showing epileptics and chorionic movements. Among the foreigners, Dr. Doyen made the most stir, reading papers in several sections and showing moving pictures to illustrate surgical technique. Dr. A. Martin of Germany was also a prominent figure. The hospitals of Lisbon made a



Medical School Building at Lisbon, built around a hollow square

cordial reception given it and the series of fêtes and receptions given. These included a garden party by their majesties in the royal gardens. The King and his charming Queen received the guests and requested them to walk about the garden and partake of a most elaborate collation served under the shadow of magnificent trees and vines. Another garden party was given by the Marquess of

Furck and Dr. McDonald, of New York; from Boston, Dr. Washburn, and Dr. Chase with his moving pictures showing epileptics and chorionic movements. Among the foreigners, Dr. Doyen made the most stir, reading papers in several sections and showing moving pictures to illustrate surgical technique. Dr. A. Martin of Germany was also a prominent figure. The hospitals of Lisbon made a



Amalgamated group of the congress

Montserrat in his wonderful grounds at Estoril. Before the marquis, an Englishman, named Cook, and I, who received us on the train terrace. The Geographical Society gave a reception, at which we were treated to the old national music and dances and to some stereopticon views of the Portuguese colonies. An elaborate reception

was given by the Portuguese government from the cathedral, and up to date, Lisbon was being treated by the French light of the large hospital.

We were very sorry when the congress was closing. We were all taken back to the ships of the fleet, which had been waiting for us since the day of the opening of the congress.

Am. Med. Soc. Rep.

W

RECORD OF MORTALITY FOR THE WEEK ENDING SATURDAY, MAY 5, 1906.

| CITIES. | Reported deaths in each. | Deaths under five years. | CITIES. | Reported deaths in each. | Deaths under five years. |
|------------------------|-----------------------------|-----------------------------|-----------------------|-----------------------------|-----------------------------|
| New York | 1,577 | 489 | Quincy | 4 | 2 |
| Chicago | 535 | 271 | Waltham | — | — |
| Philadelphia | 502 | 139 | Gloucester | 4 | 1 |
| St. Louis | — | — | Pittsfield | — | — |
| Baltimore | 215 | 61 | Brookline | 9 | — |
| Cleveland | — | — | North Adams | 6 | 1 |
| Buffalo | — | — | Chicopee | 1 | 1 |
| Pittsburg | — | — | Northampton | 12 | 2 |
| Cincinnati | — | — | Medford | 3 | 2 |
| Milwaukee | — | — | Seymour | — | — |
| Washington | — | — | Hyde Park | 4 | 1 |
| Providence | 89 | 24 | Newburyport | 5 | 1 |
| Boston | 226 | 62 | Leominster | 2 | — |
| Worcester | 36 | 13 | Ware | — | — |
| Fall River | 44 | 12 | Woburn | 14 | 5 |
| Cambridge | 28 | 10 | Marlborough | 4 | 0 |
| Lowell | 37 | 11 | Westfield | 3 | — |
| Lynn | 29 | 3 | Peabody | — | — |
| New Bedford | 29 | 15 | Revere | 3 | — |
| Springfield | 19 | 7 | Clinton | 3 | 1 |
| Lawrence | 23 | 12 | Attleboro | 3 | 2 |
| Somerville | 29 | 6 | Adams | — | — |
| Holyoke | 15 | 7 | Garfield | 3 | 1 |
| Brookton | 16 | 6 | Milford | 6 | 1 |
| Malden | 12 | 5 | Weymouth | 2 | 0 |
| Salem | 10 | 3 | Wakefield | — | — |
| Chelsea | 16 | 5 | Watertown | 1 | 0 |
| Haverhill | 5 | — | Plymouth | 1 | — |
| Newton | 14 | 4 | Southbridge | 3 | — |
| Fitchburg | — | — | Ware | 2 | — |
| Taunton | — | — | Webster | — | — |
| Everett | 3 | 2 | | | |

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING MAY 2, 1906.

KALOCH, P. C., surgeon. Granted leave of absence for one day, April 30, 1906. April 27, 1906.

CARRINGTON, P. M., surgeon. Granted leave of absence for three days from April 30, 1906, under paragraph 189 of the Service regulations.

NYDEGGER, J. A., passed assistant surgeon. Leave of absence granted Passed Assistant Surgeon Nydegger for seven days from April 23, 1906, amended to read for five days only. May 2, 1906.

LUMSDEN, L. L., passed assistant surgeon. Granted leave of absence for two months from June 1, 1906. May 1, 1906.

STANSFIELD, H. A., passed assistant surgeon. Granted leave of absence for five days under paragraph 191 of the regulations.

STANSFIELD, H. A., passed assistant surgeon. Granted leave of absence for fourteen days from April 30, 1906. May 2, 1906.

BURKHALTER, J. T., passed assistant surgeon. Granted extension of leave of absence for four days from May 3, 1906. May 2, 1906.

FOSTER, A. D., assistant surgeon. Granted leave of absence for one month from April 1, 1906, on account of sickness. April 28, 1906.

ROBERTSON, H. MCG., assistant surgeon. Granted leave of absence for one month and twenty-one days from May 14, 1906. April 25, 1906.

MASON, W. C., acting assistant surgeon. Granted leave of absence for three days from April 30, 1906. April 26, 1906.

STEARNS, H. H., acting assistant surgeon. Granted leave of absence for five days under the provisions of paragraph 210 of the service regulations.

TUTTLE, JAY, acting assistant surgeon. Granted leave of absence for thirty days from May 1, 1906. May 1, 1906.

RYDER, L. W., pharmacist. Granted leave of absence for two days from April 30, 1906. May 1, 1906.

BELL, J. M., pharmacist. Granted leave of absence for thirty days from May 18, 1906. April 20, 1906.

SOCIETY NOTICES.

AMERICAN GASTRO-ENTEROLOGICAL ASSOCIATION.—The ninth annual meeting of the American Gastro-Enterological Association will be held at Boston, Mass., Monday and Tuesday, June 4 and 5, 1906. Monday meeting at Sprague Hall, Boston Medical Library, No. 8, The Fenway. Tuesday meeting at Harvard Medical School, Boylston and Exeter streets, Lecture Room E.

AMERICAN PROCTOLOGICAL SOCIETY.—This society will hold its eighth annual meeting, Boston, Mass., June 5 and 6, 1906. Headquarters and place of meeting, Hotel Vendome, Commonwealth Avenue. "Annual Address" by the President, Lewis H. Adler, M.D., Philadelphia. The profession is cordially invited to attend all meetings.

A. B. COOKE, M.D., Nashville, Tenn.,
Secretary.

AMERICAN ACADEMY OF MEDICINE.—The thirty-first annual meeting of the American Academy of Medicine will be held in the Banquet Hall of the Brunswick, Copley Square, Boston, on Saturday, June 2, and Monday, June 4, 1906.

AMERICAN GYNECOLOGICAL SOCIETY.—The thirty-first annual meeting of the American Gynecological Society will be held at "The Homestead," Hot Springs, Va., Tuesday, Wednesday and Thursday, May 22, 23, 24, 1906.

APPOINTMENTS.

DR. CARROLL E. EBPSON, formerly of Boston, has been appointed to the professorship of theory and practice in the University of Colorado.

JOHN LOVETT MORSE, M.D., has been appointed assistant professor of Pediatrics in the Medical School of Harvard University for five years from Sept. 1, 1906.

GEORGE GRAY SEARS, M.D., has been appointed assistant professor of Clinical Medicine, in the Medical School of Harvard University, for five years from Sept. 1, 1906.

ELMER ERNEST SOUTHAUD, M.D., has been appointed assistant professor of Neuropathology, in the Medical School of Harvard University, for five years, from Sept. 1, 1906.

RECENT DEATHS.

DR. PHILANDER COLLARD, of Ossining-on-the-Hudson, died from diabetes on May 7. He was born in Westchester County, New York, in 1845, and had practised in Ossining since 1885.

DR. LEROY D. MCWAYNE, a well-known specialist in diseases of the throat and nose, died at his home in Hoosick Falls, Rensselaer County, N. Y., on May 10, from cardiac disease. He was a veteran of the Civil War, and began the practice of medicine in 1879.

WILLIAM MICHAEL EDWARD MELEN, M.D., M.M.S.S., died in Chicopee May 14, 1906, aged fifty-eight years.

BOOKS AND PAMPHLETS RECEIVED.

Ellis's Demonstrations of Anatomy. Being a Guide to the Knowledge of the Human Body by Dissection. Twelfth edition, revised and edited by Christopher Addison, M.D., B.S., Lond., F.R.C.S. Illustrated. New York: William Wood & Co., 1906.

Transactions of the Eleventh Annual Meeting of the American Laryngological, Rhinological and Otological Society held in Boston, Mass., June 5, 6 and 7, 1905. St. Louis, 1906.

Annual Report of the Trustees and Officers of the Ohio Hospital for Epileptics at Gallipolis to the Governor of the State of Ohio for the Fiscal Year ending November 15, 1905. Columbus: F. J. Heer. 1906.

University of California Publications. Physiology. The Toxicity of Atmospheric Oxygen for the Eggs of the Sea-Urchin (*Strongylocentrotus Purpuratus*) after the Process of Membrane Formation. By Jacques Loeb.

A Manual and Atlas of Dissection. By Simon Menno Yutzey, M.D., Illustrated. With an Introduction by J. Playfair McMurrich, A.M., Ph.D. Philadelphia: P. Blakiston's Son & Co., 1906.

Medico-Chirurgical Transactions. Published by the Royal Medical and Chirurgical Society of London. Vol. 88. London: Longmans, Green, & Co., 1905.

The Localization of the Higher Psychic Functions, with Special Reference to the Prefrontal Lobe. By Charles K. Mills, M.D., and T. H. Weisenburg, M.D. Reprint.

The International Medical Annual: A Year Book of Treatment and Practitioner's Index. By various contributors. Twenty-fourth Year. New York: E. B. Treat & Co., 1906.

Transactions of the American Climatological Association. For the year 1905. Vol. xxi.

Table II gives the same information from 1893 to date for the old city of New York (the boroughs of Manhattan and the Bronx).

TABLE II.

TYPHOID FEVER IN MANHATTAN AND BRONX

| Cases. | Deaths. | Death Rate. | Case Fatality. | Population. |
|------------|---------|-------------|----------------|-------------|
| 1893 1,008 | 381 | 2.16 | 37.7% | 1,758,010 |
| 1894 792 | 326 | 1.80 | 41.1 | 1,809,353 |
| 1895 965 | 322 | 1.71 | 33.3 | 1,879,195 |
| 1896 1,002 | 297 | 1.53 | 29.6 | 1,931,077 |
| 1897 1,004 | 299 | 1.50 | 29.7 | 1,990,562 |
| 1898 1,535 | 376 | 1.83 | 24.1 | 2,048,830 |
| 1899 1,290 | 294 | 1.38 | 22.7 | 2,117,106 |
| 1900 1,759 | 372 | 1.81 | 21.1 | 2,055,714 |
| 1901 1,945 | 412 | 1.91 | 21.1 | 2,118,209 |
| 1902 2,629 | 400 | 1.83 | 15.2 | 2,182,836 |
| 1903 2,462 | 350 | 1.55 | 11.2 | 2,219,680 |
| 1904 2,136 | 309 | 1.33 | 11.4 | 2,318,831 |
| 1905 2,194 | 310 | 1.21 | 11.1 | 2,390,382 |

Manhattan.—The greatest number of cases (100) was reported during the week ending Sept. 2, the smallest (7), during the week ending April 22.

The number of cases, deaths, death rate, and case fatality were all lowered during 1905, the death rate (1.28) being lower than for years. The map of Manhattan, on which the cases were plotted, showed no definite localization of the disease, except that there were relatively more cases in the upper west side of the borough.

Brooklyn.—Although quite an extensive outbreak of the disease occurred in Brooklyn during the summer of 1905, the total number of cases for the year being 1,913 as compared with 1,050 in 1904, yet the disease was of a very mild type, there being fewer deaths than in 1904, a lower death rate, and a decrease in the case fatality of almost 50%.

In July, 1905, a marked increase took place in the number of cases reported, the weekly number being greater by from twenty to twenty-five. From that date the number of cases steadily increased until by Sept. 1, 1,287 cases and 195 deaths had been reported, as compared with 483 cases and 152 deaths for the same period of 1904. The number of cases reported weekly reached the normal average number (25 to 40) about Oct. 1. The epidemic was not very fatal, the case fatality being about 15%. Of 1,081 cases classified according to causation, in 360 no cause could be assigned (probably due to infected water); 102 were milk drinkers; in 196 the disease was contracted out of the city; in 95 the disease was contracted probably from another case in the family; in 27 there was a history of oysters having been eaten.

The Thirtieth Ward.—The outbreak of typhoid fever in Brooklyn was especially marked in the Thirtieth ward (Bath Beach and Bensonhurst) there being 109 cases reported during the first three weeks of August. A house-to-house visitation was instituted, and circulars of instructions strongly advising the boiling of all drinking water and milk were left at each house. On Aug. 19 a special sanitary staff was organized, 7,692 inspections were made, and 1,670 orders issued

against existing unsanitary conditions. Of these 1,097 were against unnecessary cesspools and privy vaults, and 106 against wells and cisterns used for drinking water. Two hundred and fifty-eight sewer connections were ordered. Work was done in filling in offensive dumps and stagnant ponds, and in disinfecting offensive sewers and privy vaults. The water and milk supply, including the Ridgewood watershed, was investigated. Of 60 wells used for drinking purposes, 47 were condemned as unfit for use after chemical analysis of the water.

Consideration of the facts makes it probable that the majority of the cases were due to infection of the water supply, such infection taking place: (a) Outside the city (sources of supply); (b) locally, from leaky cesspools; and (c) in Gravesend Bay, which is largely used for bathing purposes, and where many sewers empty. Direct contact probably played a considerable part, also.

The Bronx.—In this borough also there was a slight, fairly well localized outbreak of typhoid fever, late in the year. Between Nov. 15, and Dec. 31, 126 cases were reported. Of these 92, or 73%, were in the area bounded by Westchester Ave., East 170th St., Tinton Ave., and Washington Ave.

The death rate for the year was slightly increased, but the case fatality was diminished, it being lower than in any other borough. The same steps were taken as in Brooklyn: a house-to-house inspection made in all tenement neighborhoods, circulars of instructions widely distributed, and personal, oral instruction given to the family of each patient. By the first of January, 1906, the outbreak was at an end.

No evidence of any milk-borne infection was obtained, but it is interesting to note, that the section of the borough above mentioned received its water from the Williamsbridge reservoir, which is supplied by the Kensico and Byram watersheds. The southerly portion of the borough, supplied by the Westchester Water Company, and the westerly portion supplied by the Croton watershed, had but few cases.

Queens.—The number of cases and deaths were about the same as in 1904. The case fatality from the disease, for some unexplained reason, was extremely high in this borough.

Richmond.—There were fewer cases and deaths than in 1904, both the death rate and the case fatality being reduced.

Greater City.—Although there were almost 100 more cases in 1905 than in 1904 (due to the Brooklyn and Bronx outbreaks), yet there were fewer deaths, the death rate being reduced to 1.61 and the case fatality to 15%.

Tabulation of Cases.—As previously stated, detailed information was obtained regarding every case of typhoid fever occurring in the city of New York, especial attention being paid to the sources of infection. The results have been tabulated by boroughs and are given in the following table:

TABLE III.

| | TYPHOID FEVER, 1905. | | | | | |
|---------------------------------|----------------------|----------------|----------------|---------|----------------|--------|
| | Man- hattan. | Brook- lyn. | Brook- lyn. | Queens. | Rich- mond. | Total. |
| Male, | 844 | 172 | 835 | 79 | 47 | 1,977 |
| Female, | 728 | 136 | 667 | 58 | 19 | 1,608 |
| Total no of cases, | 1,572 | 308 | 1,502 | 137 | 66 | 3,585 |
| Age. | | | | | | |
| 0-1 years, | 3 | 0 | 5 | 0 | 0 | 8 |
| 1-5 " | 72 | 19 | 89 | 4 | 2 | 186 |
| 5-10 " | 169 | 46 | 137 | 26 | 3 | 381 |
| 10-20 " | 426 | 93 | 402 | 44 | 8 | 973 |
| 20-50 " | 810 | 132 | 753 | 44 | 48 | 1,787 |
| 50 and over, | 72 | 11 | 30 | 4 | 1 | 121 |
| Not stated, | 20 | 4 | 86 | 15 | 4 | 129 |
| Occupation. | | | | | | |
| Actress, | 10 | | 4 | | | 14 |
| Baker, | 10 | 2 | 9 | 0 | 0 | 21 |
| Bartender, | 16 | 2 | 4 | 0 | 2 | 24 |
| Cook, | 19 | 0 | 0 | 0 | 0 | 19 |
| Clerk, | 185 | 44 | 155 | 13 | 9 | 406 |
| Cigar-maker, | 13 | | 3 | | | 16 |
| Carpenter, | 18 | 7 | 12 | 2 | 2 | 41 |
| Housework, | 261 | 56 | 275 | 29 | 7 | 628 |
| Laborer, | 112 | 9 | 74 | 18 | 3 | 216 |
| Nurse, | 29 | 4 | 13 | 2 | 0 | 48 |
| Out-door, | 98 | 17 | 108 | 5 | 2 | 230 |
| Painter, | 13 | 2 | 6 | 3 | | 24 |
| Physician, | 4 | | 3 | | | 10 |
| Plumber, | 13 | 4 | 8 | 6 | | 31 |
| Printer, | 10 | | 32 | | | 42 |
| Professional, | 34 | 6 | 45 | 0 | 2 | 87 |
| Salesman, | 37 | 3 | 77 | | | 117 |
| School, | 273 | 62 | 173 | 20 | | 528 |
| Sewing, | 59 | 8 | 32 | 1 | 2 | 102 |
| Skilled artisan, | 23 | 19 | 43 | 6 | 3 | 94 |
| Waiter, | 12 | 2 | 6 | | | 20 |
| Workers at man- ual trades, | 55 | 12 | 79 | 14 | 2 | 162 |
| None or not stated, | 268 | 49 | 341 | 15 | 32 | 705 |
| | 1,572 | 308 | 1,502 | 137 | 66 | 3,585 |
| Dwelling. | | | | | | |
| Private house, | 129 | 82 | 391 | 58 | 17 | 677 |
| Boarding house, | 35 | 3 | 60 | 9 | 1 | 107 |
| Lodging house, | 30 | 2 | 11 | 4 | 0 | 47 |
| Hotel, | 28 | 0 | 0 | 3 | 0 | 31 |
| Institution, | 3 | 0 | 3 | 0 | 0 | 6 |
| Tenement, | 1,053 | 117 | 552 | 18 | 4 | 1,774 |
| Sanitary Condition. | | | | | | |
| Bad, | 81 | 43 | 158 | 1 | 0 | 283 |
| Blood examined, | 1,018 | 156 | 621 | 69 | 53 | 1,947 |
| Widal positive, | 938 | 124 | 514 | 61 | 38 | 1,675 |
| Spleen enlarged, | 991 | 181 | 851 | 102 | 48 | 2,173 |
| Rose spots pres- ent, | 846 | 156 | 835 | 102 | 43 | 1,982 |
| Other cases, family, | 120 | 18 | 80 | 6 | 3 | 227 |
| Other cases, house, | 32 | 9 | 76 | 3 | 3 | 123 |
| Other cases, friends, | 32 | 5 | 51 | 5 | 0 | 93 |
| Patient had sepa- rate room, | 602 | 161 | 996 | 81 | 17 | 1,857 |
| Milk drinker, | 527 | 116 | 839 | 52 | 21 | 1,558 |
| Oyster eater, | 136 | 17 | 98 | 10 | 2 | 263 |
| Water. | | | | | | |
| Bottled, | 71 | 8 | 83 | 2 | 1 | 165 |
| Croton, | 1,023 | 151 | 817 | 77 | 15 | 2,086 |
| Tank, | 141 | 0 | 76 | 7 | 13 | 240 |
| Out of town water, | 125 | 50 | 426 | 37 | 28 | 966 |
| Precautions taken, | 1,236 | 237 | 1,301 | 120 | 58 | 2,952 |
| Source of Infection. | | | | | | |
| Water, | 395 | 103 | 325 | 24 | 17 | 864 |
| Milk, | 192 | 30 | 277 | 19 | 7 | 525 |
| Oysters, | 69 | 1 | 50 | 4 | 0 | 124 |
| Exposure, | 120 | 31 | 72 | 2 | 0 | 225 |
| Out of town, | 313 | 22 | 171 | 16 | 13 | 535 |
| Unknown, | 483 | 121 | 607 | 72 | 29 | 1,312 |

REMARKS.

Ser.—Fifty-five per cent of the cases occurred in males, except in Richmond, where they constituted 71%.

Age.—About one half were between the ages of twenty and fifty years. Only 8 (0.2%) patients were under one year of age, while 186, or 5.1%, were between the ages of one and five years; 3% were over fifty. About the same percentages hold good for the various boroughs.

Occupation.—The large percentage of clerks, school children and housewives is readily explained by the fact that so many of the population fall into those classes. Actresses and salesmen travel, and acquire their disease elsewhere. But why were no actors among the number? It is difficult to explain the high percentages of cooks, bakers and waiters; also of persons following one of the various occupations connected with sewing.

Dwelling and Condition.—The social status of the patients can be gathered from the character of their dwellings. In Manhattan 66% were tenement-house dwellers—*i.e.*, of the lower classes. In Brooklyn only 36% were tenement-house dwellers. The proportion of dwellers in private houses was much higher in Brooklyn than in Manhattan. In 8%, the sanitary condition of the dwelling was found to be bad, the proportion being highest in Brooklyn.

Result of Blood and Urine Examination.—A blood test for the Widal examination was made in 54% of the cases, and the diagnosis confirmed in 86%. Fifty-three per cent of the examinations were in Manhattan cases, as compared with 31% in Brooklyn. Yet the number of cases in the two boroughs was about the same.

Other Clinical Signs.—Rose spots were present in 55%, and enlargement of the spleen in 60%.

Occurrence of Other Cases.—Other cases occurred in the same family in 6%, and in other families in the same house in only 3%.

Source of Infection.—In 2,273 cases an expression of opinion as to the probable source of infection was obtained from the attending physician or inspector as follows: Due to infected water 38%; milk, 23%; oysters, 5%; exposure to other cases 9%; infection acquired outside of New York City 3%.

These figures are of little value, however. About 10% of the cases were water drinkers, and 84% used city water.

General Conclusions.—Typhoid fever is transmitted from the sick to the well in one of two main ways: 1. By infection of water with typhoid excreta. The great majority of all cases arise from this cause. From such infected water typhoid bacilli enter the human system through (a) Drinking water; (b) milk (contaminated by water); (c) oysters; (d) food stuffs (salads, fruits, etc.); (e) water used for bathing purposes. 2. By direct contact of the well with the sick. 3. Infection of food stuffs, etc., by flies.

INFECTION OF WATER.

Proof of Infection.—The one absolute proof of infection of water, milk, etc., is the detection therein of typhoid bacilli. Unfortunately, this is almost never possible of attainment. The occurrence of a case of typhoid fever is evidence only of infection two weeks previously. Typhoid bacilli may be present in water or milk for a day or two only, work a great deal of mischief in that time, and then disappear. The source from which infection comes may be transient—the accidental emptying of sewage into a water supply, or the temporary encampment of a party of workmen or tramps by a stream or lake.

At present bacteriologists practically discourage any hope of finding typhoid bacilli in samples of water, as the bacillus is differentiated with great difficulty from the other organisms almost invariably present; and as it is relatively short lived, examination for that end alone is usually a waste of time. Far more assistance is given by examination for the bacteria of sewage (the colon bacillus, etc.) and by chemical analysis. Given the presence of the colon bacillus and of ammonia and nitrites in water, it is practically certain that sewage contamination has occurred; that the water contains typhoid bacilli can be only a matter of inference. In small communities having limited and localized sources of water supply, tracing out the cause or causes of an epidemic of typhoid fever is relatively simple. In New York City, with its many sources of water supply, some of them covering many square miles; its daily milk supply of thousands of gallons, coming from hundreds of different dairy farms; its supply of oysters from all along the Atlantic coast; and its green salads and fruits from everywhere, typhoid bacilli are probably brought in steadily and constantly by all of these.

Earlier in this report, in the tabulation of data, cases are classified according to supposed source of infection—water, milk, oysters, exposure to other cases, contraction of the disease outside the city, etc. The figures given are of relatively little value, however, the fact that a person drinks milk or water, eats oysters, has been out of town for a day or so during the preceding month, or has been exposed to another case of typhoid, does not alone warrant our ascribing the disease to that particular cause. Even the most confirmed drinker of bottled water drinks water from the city supply now and then and the biter of milk occasionally takes it in some form.

Taking up now the various sources of infection in turn:

1. (a) *Drinking Water.* As has been said it is at present practically impossible to detect typhoid bacilli in drinking water. Yet a visit to any of the various watershed will convince the most skeptical of the extreme facility with which such contamination may take place. It is improbable that much, if any, local contamination occurs. In outlying sections of the city (e.g., the Thirtieth ward of Brooklyn), where drinking

water is obtained from wells, leaky cesspools may cause infection. But where the water is piped and under constant pressure it is practically impossible for typhoid bacilli to gain ingress.

As soon as the occurrence of an increased number of cases of typhoid fever was recognized in Brooklyn and the Bronx the Department of Health, by means of circulars and oral instructions, urged most strongly that all water should be boiled before being used for drinking purposes in those boroughs. This advice was widely adopted; in each borough the outbreak came to an end within a few weeks, i.e., the period required to demonstrate the effectiveness of such a procedure.

OBJECTIONS TO THE DRINKING WATER THEORY.

The objection is at once raised by many that if the drinking water is responsible for much of the typhoid fever in New York City, we should have, instead of a hundred cases weekly, a thousand or ten thousand. Possible answers to such objections are as follows: (a) To contract typhoid fever the bodily powers of resistance to the entrance of the typhoid bacillus must probably be below par. Unless typhoid bacilli are taken in in large numbers or are exceedingly virulent, the protective functions of the organism are sufficient to cope with them. Such functions are the secretion of acid, bactericidal gastric juice, the bactericidal powers of the cells lining the intestinal canal, and the similar powers of the blood (serum and cells). But when temporary indigestion or diarrhea are present the defenses of the citadel are weakened and the enemy storms the gates. The case is analogous to cholera; during severe cholera epidemics it has been noted that diarrheas are prevalent, the drinking water containing organisms which set up such diarrheas which in turn inflame and irritate the gastro-intestinal mucous membrane, and pave the way for the entrance of cholera bacilli.

Typhoid fever is more prevalent during the summer and autumn, might not this be partly due to the increased prevalence of other diarrheal diseases at that time? (b) It is extremely probable that a considerable proportion of the population is relatively immune to typhoid fever from having previously suffered from the disease in an unrecognized form. The view that the disease invariably runs a course of from two to four weeks is no longer held by most authorities. Abortive forms occur lasting only a few days. As a rule such attacks are termed "bilious attacks," "ephemeral fever," etc. In the Diagnostic Laboratory of the Department of Health it has frequently been noted that a typical Widal reaction may be present in the blood, and yet the entire duration of the febrile attack be only a few days.

1. (c) *Milk.* The rôle played by milk in the causation of typhoid fever is not to be lightly disregarded. Undoubtedly a certain percentage of the cases of typhoid fever in New York City are milk-borne. The milk supply of the city

comes primarily from hundreds of dairy farms, on any of which infection of the milk through washing the cans, etc., with infected water may readily take place. Yet two facts must be borne in mind: (a) That the greater part of the milk supply of the city is controlled by a few large companies. All these companies maintain a staff of inspectors who visit each farm periodically to see that all conditions are satisfactory. (b) That the Division of Inspections of the Department of Health of New York City keeps careful watch over the milk supply of the city; not only are the individual distributing points under supervision, but, following back through the wholesalers, the entrance of the milk into the city is most carefully watched—it must come up to a certain standard, must not contain more than a certain number of bacteria to the cubic centimetre, and must be properly cooled and shipped. Further, inspectors of the Department visit any farms forwarding unsatisfactory milk to determine if unsanitary conditions exist.

Recent Outbreaks.—To show how carefully the evidence must be weighed, the experience of the Department of Health in connection with the recent outbreak of typhoid fever in Brooklyn may be cited:

Investigation of the source of the milk supply showed that of 941 cases, 244, or 38.7%, received their milk supply from one large wholesale and retail milk company. Examination of the milk records in other boroughs showed that the proportion of cases supplied by this same company was only 7%. It was at once thought that the cause of the epidemic was not far to seek, but further investigation showed that the milk of this company probably had nothing to do with the epidemic, for the following reasons:

The company supplied fully 75% of the milk consumed in the Borough of Brooklyn. Of 113 milk permits issued in one ward this company had 89. Investigation of the company revealed the following facts: The officials expressed themselves as being most desirous of assisting the Department and working with it in any investigation thought necessary or advisable. The company constantly employed a physician and a veterinarian who made inspection of the farms and cattle. Such an inspection had been recently made. Moreover, when the daily papers intimated that one or two milk companies might have been at fault in this local epidemic, a special inspection was made of all farms whence milk sent to Brooklyn was obtained. In all cases of illness found on such farms, the company shut off the milk but continued to pay for it according to contract, thus removing temptation to conceal illness. There was no illness known of among either dairymen or cattle. The company at once ordered another inspection made of the farms supplying Brooklyn, special attention being paid to possible water contamination. This inspection showed that there had been no cases of typhoid fever on said farms for over two years. This incident has been described in detail as showing how readily a biased observer might

have ascribed the cause of the epidemic to infected milk.

Bearing in mind that a great majority of persons use milk and cream, it is not to be wondered at that a history of such use is obtained in a large number of cases.

1. (c) *Oysters.*—It is well recognized that raw oysters may contain living virulent typhoid bacilli, and may transmit the disease. The pernicious practice in this vicinity of fattening oysters in tide-water inlets, the water of which contains large quantities of sewage, is responsible. Yet only a small proportion of the total number of cases is due to this cause,—it is a curiosity more than anything else.

1. (d) *Infected Food Stuffs.*—Theoretically, it is quite possible that green salads and fruits, which have been sprinkled with infected water may be the means of transmission of typhoid fever. So far no authenticated case of such a mode of infection has come to our notice.

1. (e) *Injection of Water Used for Bathing Purposes.*—At many places used for bathing purposes along the North and East rivers and the Long Island shore sewers empty in the immediate vicinity, and contaminate the water. The water may enter the mouths and noses of the bathers and be swallowed; if typhoid bacilli are present in sufficient quantity the disease is set up. In the thirtieth ward of Brooklyn (Bath Beach and Bensonhurst) this mode of infection undoubtedly played a considerable part in the outbreak. It was also found that in several instances (notably in the Harlem River) the public swimming baths were moored in the immediate neighborhood of discharging sewers; it is entirely possible that some of the users of said baths may have contracted typhoid fever. But as a cause of the disease bathing in infected water plays a part only in a few localities.

2 and 3. *Transmission of the Disease by Direct Contact.*—We have no means of determining what percentage of cases is due to the above cause. Judging by the number of instances in which two or more cases occurred in the same family, it is not considerable. Yet such cases undoubtedly constantly occur. Further consideration of this important side of the question is beyond the province of this article, as is the question as to the relation between flies and typhoid fever.

Conclusion.—In conclusion, therefore, it is the writer's opinion that the majority of cases of typhoid fever in New York are due to infected water. The grounds for such belief may be summed up as follows: 1. By exclusion. Investigation of the city's supply of milk, oysters, etc., has so far failed to reveal enough to account for the number of cases occurring in the city.

2. Distribution of cases into areas corresponding to different sources of water supply (*vide*, the Bronx).

3. Ample opportunity afforded for infection in the various watersheds.

4. Suppression of outbreaks by the boiling of all drinking water and milk.

The remedies for this state of affairs can be put

in a few words: 1. Isolation and protection of all sources of water supply. 2. Introduction of filtration systems. This has been strongly and ably urged by Dr. Thomas Darlington, President of the Department of Health, in a report to Mayor McClellan. 3. Education of the medical profession and public, outside of as well as in the city, as to the necessity of the immediate sterilization of all typhoid excreta.

Could an efficient system of filtration of the water supply of New York City be introduced, there is every reason to feel confident that the death rate of typhoid fever of Greater New York would sink from 16 per 100,000 to 5 per 100,000 at the most. Such has been the result of the introduction of filtration in the large continental cities—Berlin, London, etc.—and it is due to such filtration and to nothing else.

Typhoid fever is a preventable disease. The mode of prevention seems clear; it is little short of criminal if the community fails to act.

REMARKS ON THE INFECTIONS OF JOINTS.*

BY ROBERT W. LOVETT, M.D., BOSTON

IN no department of joint disease has so great a disturbance occurred in the last few years as in the views regarding infections in their relation to joint affections.

For many years it has been recognized¹ that joint inflammation of a more or less severe type occurred in connection with certain forms of general sepsis, as in pyemia; in certain forms of specific infection, such as gonorrhea, scarlet fever, typhoid fever and pneumonia, and after trifling local infections. But that acute articular rheumatism was an infectious disease and possibly only "an attenuated pyemia," and that the joint manifestations accompanying rheumatism were possibly very closely allied to those septic joints mentioned above, is a point of view that has dawned on the medical community only of late years, and is at present the most interesting question before one interested in the diseases of joints. A quotation from a paper by Poynton, however, points out better than I could do the difficulties of the situation:² "It is no easy task to grapple with the subject of arthritis . . . for around gout, rheumatism and rheumatoid arthritis, theory has cast her bright and attractive mantle, beneath which gray and sober fact is liable to be stifled."

In general, acute joint infections fall into four groups:

(a) Acute osteomyelitis of the articular end of one of the long bones involving the joint secondarily.

(b) Acute suppurative synovitis or joint abscess.

(c) Acute plastic synovitis leading to joint obliteration.

(d) Acute serous synovitis.

Tuberculous and chronic joint disease are not considered in this classification.

I shall pass briefly over the first three divisions, which are treated at length in all modern textbooks, and call your attention particularly to the relation of infection to serous synovitis.

(a) *Acute osteomyelitis*,³ involving the joints needs only to be mentioned. It is an acute suppurative inflammation of bone, due to infection of the bone marrow by pyogenic organisms. The staphylococcus is the most frequent, the other organisms found being the streptococcus, the pneumococcus and the typhoid bacillus. The bacillus fetidus, the colon bacillus, the pyocyanus and anthrax have been reported. The condition can be produced in animals by the introduction of pyogenic organisms into the nutrient arteries of the bones and by trauma to animals infected through the general circulation. The bone infection occurs in infectious diseases, such as measles, typhoid fever and the like. It appears following some slight local suppuration such as paronychia or furuncle. It is to be found as the result of direct infection, as in septic compound fractures, and in many cases no source of infection can be found. It must be remembered, however, that what is to be said of the throat as a port of entry for pyogenic organisms in connection with rheumatism, applies here as well. A typical instance is as follows:

A healthy boy of six blistered his heel from his boot, and this blister was opened by his mother with a pin. That night a chill occurred, followed by great pain in the left tibia. This tibia was operated upon and opened a few days later and found to be stripped of periosteum over much of its surface. The left hip then became extremely swelled and painful, and was flexed and abducted. Sleep was impossible and general sepsis was present, the temperature was 103 and the child's condition most serious. The hip was incised and a collection of pus found in the joint. The neck of the femur was drained, the hip a few days later dislocated spontaneously, but was replaced and held by a plaster bandage, and the boy made a good recovery.

The treatment of such cases consists in the earliest possible free drainage of the joint, with a careful search for the infected area of bone, which should be opened.

(b) *Acute suppurative synovitis*, or joint abscess, occurs as the result of various infective organisms and appears in infectious diseases of a wide range, and also as the result of direct infections of the joints, as in wounds.

The infectious diseases in which joint infections have been reported are as follows:

Cerebro-spinal meningitis, diphtheria, dysentery, erysipelas, epidemic parotitis, glanders, gonorrhea, epidemic influenza, measles, pneumonia, pertussis, puerperal fever, pyemia, septicemia, scarlet fever, smallpox, tonsillitis, typhoid fever, typhoid fever, after the use of sounds and catheters, and possibly in malaria.⁴

The treatment consists in free drainage of the

* Read before the Boston Society for Medical Improvement, March 12, 1906.

¹ Howard Marsh, Infective Arthritis, *Lancet*, Dec. 13, 1903, p. 1603.

² Poynton: *Arthritis*, Practitioner, 1903, 71, 128.

³ Edward H. Snodds, Acute Infectious Osteomyelitis, *J. ur. & Med. Assn.*, 1904.

⁴ E. C. DeGruene, see *Readings and Lectures on the Surgery*, 2d ed., p. 194.

joint as soon as the evidence of suppuration can be established by aspiration or other means.

(c) Plastic or ankylosing synovitis, in which an acute and severe joint inflammation is followed by partial or complete obliteration of the joint without suppuration, is most familiar as an accompaniment of gonorrhea. It occurs in connection with other infections and is seen following attacks of general febrile disturbance, often designated as "grippe," in which very acute joint inflammation is present. Beyond the fact that it is at times clearly of infectious origin, and presumably always of this sort, but little can be said of its etiology. No satisfactory treatment has been formulated.

(d) *Acute Serous Synovitis*. That acute serous synovitis occurs in connection with general infectious diseases has long been recognized. It is familiar under the names of "scarlatinal rheumatism," "rheumatic typhoid arthritis," "gonorrheal rheumatism," etc., and the occasional occurrence of simple joint effusions in most of the general infections is a matter of common information. Aside from these demonstrably infectious cases are the cases of single, or more often multiple, acute serous synovitis without obvious infectious cause, which are universally classed under the name of "articular rheumatism." Of course to the laity and to some of the profession, every joint pain is rheumatism until it is demonstrated to be something else, but taking the cases of legitimate acute articular rheumatism, it may be properly asked, What is the evidence for and against their infectious character?

(1) In the first place they do not differ essentially in type from cases of synovitis obviously due to infection, except that "articular rheumatism" is assumed not to suppurate; if it suppurates it must be considered infectious. An acute polyarticular or monoarticular serous synovitis occurring in the course of scarlet fever, for example, is recognized as infectious; if a similar synovitis occurs without obvious source of infection, it is generally classed as "articular rheumatism."

(2) The bacteriology of acute rheumatism has been carefully studied. Cocci in general resembling the streptococcus have been found in the joint effusion, in the endocardium and in other structures in acute articular rheumatism by many observers.⁶ This organism injected into animals has produced synovitis and endocarditis,⁷ and even choreiform movements were observed in some rabbits thus inoculated.⁸

The identity of this coccus has been disputed and its relation to the streptococcus is not clear. Three names have been given to it,—micrococcus rheumaticus (Walker),⁹ diplococcus rheumaticus (Poynton),¹⁰ streptococcus ans chora (Wasserman). Menzer, who has been one of the pioneers in this subject, sees no reason to assume that this

is a specific organism any more than is the coccus of erysipelas, and would regard it merely as a modified streptococcus.¹¹ Cole¹² has produced, by the injection of streptococci from various sources into animals, synovitis and endocarditis. In spite of the weight of English opinion,¹³ it cannot therefore be regarded that the existence of a specific micrococcus has been established.¹⁴ As against the infectious theory of rheumatism, Cole and Jochmann failed to find any microbe in the joints or blood in cases of typical articular rheumatism, and McCrae,¹⁵ in two hundred and seventy cases of acute articular rheumatism, reported the bacterial results as "practically negative." It must be remembered, however, that the bacillus of tuberculosis is found with difficulty in tuberculous joint abscess, and that the organisms of typhoid fever and gonorrhea are frequently absent from the joint effusions of those affections. Moreover, positive evidence is always more valuable than negative, and the identification of the bacteria found has been made by perfectly competent observers.

It is, of course, possible that the joint inflammation may be due to toxins produced by the bacteria rather than by the bacteria themselves. Charrin¹⁶ produced suppurative arthritis in joints by the injection of a sterilized culture of the bacillus pyocyaneus.

(3) *Source of Infection*: The existence of a primary focus of infection is wanting in many if not most cases of acute articular rheumatism; that is to say, no obvious source of pyogenic infection is found. The difficulty that such cases may offer is shown in the following cases:

A healthy young woman, the relative of a physician and under his observation, was confined and delivered of a healthy child. Her convalescence was absolutely normal and free from all suspicion of sepsis. On the tenth day, before sitting up, she developed an effusion in the left knee, accompanied by little or no pain. Traumatism in the ordinary sense was not in the question and her health and temperature were normal. No source of infection could be found, and a diagnosis of infectious synovitis of unknown source was made. The affection pursued a sluggish course and completely recovered. Some weeks later she had a doubtful attack of appendicitis which brought out the fact of former pains in the region of the appendix. Some six months after the synovitis the appendix was removed and was found to be full of pus and showing chronic inflammation of long standing. Here was a source of infection at least competent to have produced the joint symptoms.

A long step toward explaining a possible source of pyogenic infection in articular rheumatism was made some years ago in the recognition of the existence in the tonsils of organisms capable of producing the symptoms of rheumatism when injected into animals.¹⁷ The tonsils act as a filter and are more effective as such when they

⁶ Keen: Surgical Complications of Typhoid Fever.

⁷ Theilberg: Med. Record, Dec. 14, 1901, and Menzer: Der Aetiologie der Akuten Gelenkrheumatismus, Berlin, 1905.

⁸ Meyer: Deutsch. Med. Wochs., Feb. 7, 1901.

⁹ Triboulet: Revue de med., xvii, 189.

¹⁰ Practitioner, February, 1903, 185.

¹¹ Ibid., 1903, lxxi, 128.

¹² Wiener Kl. Wchsft., 1901, 20.

¹³ Jour. of Infect. Diseases, 1904, i, 114.

¹⁴ Symes: The Rheumatic Diseases, London, 1905, p. 394.

¹⁵ Jour. Am. Med. Assn., Feb. 4, 1905.

¹⁶ Ibid., Jan. 3, 1903.

¹⁷ Quoted by Cave: Lancet, Jan. 12, 1901, p. 83.

¹⁸ Menzer & Meyer: Loc. cit. Allaria Rev. Crit. de Clin. Med., Nov. 23, 1901.

are normal than when inflamed. When their cells are injured or diseased it is obviously easier for the pyogenic organisms of the locality to enter the circulation, and the frequent association of sore throat with the early stages of rheumatism suggests a lesion of the tonsils, impaired efficiency of filtration and consequent easier entrance into the circulation for the pyogenic organisms. This, to a certain extent, explains the more frequent occurrence of rheumatism during the cold and damp weather most likely to attack the throat. Chronic tonsillitis is, therefore, to be regarded as a most likely source of rheumatic infection, either in the acute cases or in the chronic joint affections to be mentioned.

A healthy boy of twelve was attacked by a sore throat followed by inflammation of the middle ear, accompanied by the usual high temperature, and the ear drum was punctured. A few days later a throat infection was made evident by a rise of temperature and sore throat. A second increase of throat symptoms followed again in three or four days. About two weeks after the onset of the original trouble, the left ankle swelled, and in a few hours became exquisitely sensitive and extremely painful to any movement and suggested the beginning of a serious purulent joint infection, but the temperature was normal and leucocytosis was absent. It was fixed in a millboard and sheet wadding dressing and two days later was free from pain. On the third day after the involvement of the ankle an effusion of less acute character appeared in the left knee. This was treated in the same way, and in a week from the onset in the ankle both joints were practically well.

The case then stands as follows: The synovitis of acute rheumatism does not differ clinically or pathologically from the synovitis of infectious diseases, except that it is more benignant. It can be produced by the injection of cultures of pyogenic organisms, and pyogenic organisms have been found in the joint effusions. The specific character of these has not been accepted. No satisfactory explanation of rheumatism has ever been offered, and the history of late years shows a steadily larger number of "rheumatic" cases constantly being classed among the infections. It cannot as yet be regarded as a specific infectious disease, but the evidence rather tends to identify it as an "attenuated pneumonia," as it has been called. The evidence is not yet conclusive and the fact that the symptoms are so readily controlled by salicylic acid in many instances is not in accord with what we know of infections.

With regard to the relations to each other of chronic rheumatism, arthritis deformans, chronic infectious arthritis and the like, and with regard to their infectious origin, there is little convincing evidence. Their frequent outcome from what appears to have been an acute rheumatic attack, the almost universal failure to recognize arthritis deformans as such when it begins acutely, and the close clinical resemblance of all the affections to each other suggests the possibility of a common cause.

The bacterial evidence for the infectious

nature of these conditions is suggestive, but nothing more.¹⁸ Organisms have been found in a comparatively few cases. These organisms have in some cases given negative results on inoculation, and in others have caused lesions similar to those of arthritis deformans, but in most cases organisms have not been found. The clinical evidence in many cases suggests an infectious origin for those processes, some of them especially in children originating during some general infection and pursuing a chronic course.¹⁹

Summary.—Acute infections of the joints of undoubted bacterial origin occur in all grades of severity in connection with many infections. As a rule, any one of two or three types of joint inflammation may occur in connection with any one infection, no one type of joint disease constantly accompanying any one infection. In many cases the source of infection cannot be established, and in such cases the importance of remembering the function of the tonsils and the presence of pyogenic bacteria in the mouth as a ready source of infection is of importance. That acute articular rheumatism is an infection seems probable from bacterial and especially from clinical evidence, but this cannot yet be regarded as definitely proved.

THE TEACHING OF HEMATOLOGY.

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This paper is based upon the writer's experience in teaching hematology at Tufts College Medical School. As our methods differ somewhat from those commonly employed, it has seemed worth while to present this brief account of them.

Our course is in charge of an instructor, who, with two assistants, is responsible to the Department of Clinical Medicine. It is given in the first part of the third year. The student has then finished his courses in anatomy, histology, pathology and other fundamental subjects, including the elementary study of the blood and its pathology. He is familiar with the use of the microscope and has just begun the clinical work in which his technical knowledge of laboratory methods will be needed and applied.

Laboratory work occupies the student two hours a week for ten weeks. The class is divided into sections of about twenty. This is a convenient number for two assistants to handle and saves needless duplication of costly apparatus.

An important item when it is considered that each student must have at his disposal a counter and a microscope with an immersion lens and a No. 5 lens objective. The first four laboratory exercises are devoted to teaching technique.

¹⁸ *Practical Pathology*, 1907, p. 100. ¹⁹ *White, Cases of Hematology*, 1907, p. 100. ²⁰ *White, Cases of Hematology*, 1907, p. 100. ²¹ *White, Cases of Hematology*, 1907, p. 100. ²² *White, Cases of Hematology*, 1907, p. 100. ²³ *White, Cases of Hematology*, 1907, p. 100. ²⁴ *White, Cases of Hematology*, 1907, p. 100. ²⁵ *White, Cases of Hematology*, 1907, p. 100. ²⁶ *White, Cases of Hematology*, 1907, p. 100. ²⁷ *White, Cases of Hematology*, 1907, p. 100. ²⁸ *White, Cases of Hematology*, 1907, p. 100. ²⁹ *White, Cases of Hematology*, 1907, p. 100. ³⁰ *White, Cases of Hematology*, 1907, p. 100. ³¹ *White, Cases of Hematology*, 1907, p. 100. ³² *White, Cases of Hematology*, 1907, p. 100. ³³ *White, Cases of Hematology*, 1907, p. 100. ³⁴ *White, Cases of Hematology*, 1907, p. 100. ³⁵ *White, Cases of Hematology*, 1907, p. 100. ³⁶ *White, Cases of Hematology*, 1907, p. 100. ³⁷ *White, Cases of Hematology*, 1907, p. 100. ³⁸ *White, Cases of Hematology*, 1907, p. 100. ³⁹ *White, Cases of Hematology*, 1907, p. 100. ⁴⁰ *White, Cases of Hematology*, 1907, p. 100. ⁴¹ *White, Cases of Hematology*, 1907, p. 100. ⁴² *White, Cases of Hematology*, 1907, p. 100. ⁴³ *White, Cases of Hematology*, 1907, p. 100. ⁴⁴ *White, Cases of Hematology*, 1907, p. 100. ⁴⁵ *White, Cases of Hematology*, 1907, p. 100. ⁴⁶ *White, Cases of Hematology*, 1907, p. 100. ⁴⁷ *White, Cases of Hematology*, 1907, p. 100. ⁴⁸ *White, Cases of Hematology*, 1907, p. 100. ⁴⁹ *White, Cases of Hematology*, 1907, p. 100. ⁵⁰ *White, Cases of Hematology*, 1907, p. 100. ⁵¹ *White, Cases of Hematology*, 1907, p. 100. ⁵² *White, Cases of Hematology*, 1907, p. 100. ⁵³ *White, Cases of Hematology*, 1907, p. 100. ⁵⁴ *White, Cases of Hematology*, 1907, p. 100. ⁵⁵ *White, Cases of Hematology*, 1907, p. 100. ⁵⁶ *White, Cases of Hematology*, 1907, p. 100. ⁵⁷ *White, Cases of Hematology*, 1907, p. 100. ⁵⁸ *White, Cases of Hematology*, 1907, p. 100. ⁵⁹ *White, Cases of Hematology*, 1907, p. 100. ⁶⁰ *White, Cases of Hematology*, 1907, p. 100. ⁶¹ *White, Cases of Hematology*, 1907, p. 100. ⁶² *White, Cases of Hematology*, 1907, p. 100. ⁶³ *White, Cases of Hematology*, 1907, p. 100. ⁶⁴ *White, Cases of Hematology*, 1907, p. 100. ⁶⁵ *White, Cases of Hematology*, 1907, p. 100. ⁶⁶ *White, Cases of Hematology*, 1907, p. 100. ⁶⁷ *White, Cases of Hematology*, 1907, p. 100. ⁶⁸ *White, Cases of Hematology*, 1907, p. 100. ⁶⁹ *White, Cases of Hematology*, 1907, p. 100. ⁷⁰ *White, Cases of Hematology*, 1907, p. 100. ⁷¹ *White, Cases of Hematology*, 1907, p. 100. ⁷² *White, Cases of Hematology*, 1907, p. 100. ⁷³ *White, Cases of Hematology*, 1907, p. 100. ⁷⁴ *White, Cases of Hematology*, 1907, p. 100. ⁷⁵ *White, Cases of Hematology*, 1907, p. 100. ⁷⁶ *White, Cases of Hematology*, 1907, p. 100. ⁷⁷ *White, Cases of Hematology*, 1907, p. 100. ⁷⁸ *White, Cases of Hematology*, 1907, p. 100. ⁷⁹ *White, Cases of Hematology*, 1907, p. 100. ⁸⁰ *White, Cases of Hematology*, 1907, p. 100. ⁸¹ *White, Cases of Hematology*, 1907, p. 100. ⁸² *White, Cases of Hematology*, 1907, p. 100. ⁸³ *White, Cases of Hematology*, 1907, p. 100. ⁸⁴ *White, Cases of Hematology*, 1907, p. 100. ⁸⁵ *White, Cases of Hematology*, 1907, p. 100. ⁸⁶ *White, Cases of Hematology*, 1907, p. 100. ⁸⁷ *White, Cases of Hematology*, 1907, p. 100. ⁸⁸ *White, Cases of Hematology*, 1907, p. 100. ⁸⁹ *White, Cases of Hematology*, 1907, p. 100. ⁹⁰ *White, Cases of Hematology*, 1907, p. 100. ⁹¹ *White, Cases of Hematology*, 1907, p. 100. ⁹² *White, Cases of Hematology*, 1907, p. 100. ⁹³ *White, Cases of Hematology*, 1907, p. 100. ⁹⁴ *White, Cases of Hematology*, 1907, p. 100. ⁹⁵ *White, Cases of Hematology*, 1907, p. 100. ⁹⁶ *White, Cases of Hematology*, 1907, p. 100. ⁹⁷ *White, Cases of Hematology*, 1907, p. 100. ⁹⁸ *White, Cases of Hematology*, 1907, p. 100. ⁹⁹ *White, Cases of Hematology*, 1907, p. 100. ¹⁰⁰ *White, Cases of Hematology*, 1907, p. 100.

and simple: (1) Puncturing, preparation and study of fresh (wet) spreads, preparation of dry smears, hemoglobin estimation. (2) Counting the red corpuscles, care of pipette, color index. (3) Counting the leucocytes. (4) Staining and examination of films, differential counting. The six remaining exercises are devoted to the study of pathological conditions. Those taken up last year were chlorosis, secondary, pernicious and splenic anemia, leucocytosis, eosinophilia, leukemia, malaria and the blood of normal infancy. Proficiency in technique is only to be obtained by much practice — more than can be afforded in the time allowed — and the importance of this subject does not seem such as to demand more. Yet each student was required to examine and report upon at least ten smears and to make at least five counts of corpuscles. Judging from the subsequent work of a number of these students at hospital clinics, this amount of practice is enough to insure tolerable efficiency.

One of our most difficult problems has been to find laboratory material for our classes of seventy to eighty students. There is no difficulty for the first four exercises, those covering technique. Each student uses blood from his neighbor. There is a distinct advantage in seeing even the trivial operation of puncturing the ear from the patient's standpoint. One's fellow-student does not hesitate to criticise one's cleanliness or clumsiness — which is also healthful to the soul. In studying diseases, the blood of rabbits is used, though only for counting. This is, perhaps, no better practice than counting the normal blood of a fellow-student, but it is so much more interesting that it justifies the extra work involved. All count the same blood and see that it is abnormal. Having carefully counted it himself, the instructor is able to check the accuracy of each student's work, and he can set an increasingly high standard.

Rabbits may easily be made anemic by hemorrhage. Blood is best withdrawn by cardiac puncture. The animal is etherized, the region of the heart shaved and disinfected and a sterile needle attached to a syringe is introduced directly into the ventricle. The withdrawal of 10 or 15 cc. of blood, repeated in twenty-four hours, accompanied each time by the injection subcutaneously of an equal amount of normal salt solution, will produce a very considerable reduction of red cells. The animal does not appear to suffer. We have not tried the possibly simpler method of injecting solutions of toluenediamine or other hemolytic agent. Leucocytosis may be studied in rabbits with "snuffles," or, if the laboratory is fortunate enough not to have a case of this disease among its animals, leucocytosis may be produced by inoculation with a culture of one of the pyogenic bacteria. We have tried intraperitoneal injections of turpentine suspensions, but the results have proven uncertain and ephemeral.

To withdraw blood for purposes of study, the rabbit's ear must be carefully shaved over the marginal vein and thoroughly dried. The ear

should be warmed or rubbed to dilate the veins. Puncture with a surgeon's needle, or better, a large hypodermic. Direct the needle upwards against the blood current. The needle must be new and sharp. If the blood ceases to flow, start it again by introducing the needle an eighth to a quarter of an inch into the vein, wiping away the first drop to get rid of clots. After ten or fifteen minutes it will be necessary to puncture in a new place. With care to avoid needless trauma, we have been able to use the same ear for four successive sections on alternate days. The rabbit rarely evinces any pain, and will generally be contented to munch a carrot during the process, which, it should be added, is performed by an instructor and not by the students themselves. In this way twenty-five students may easily fill their pipettes.

For studying the morphology of the corpuscles, human blood must, of course, be used. Rabbit's blood is employed only for practice in counting corpuscles. It is always easy to get films illustrating such conditions as chlorosis, secondary anemia and leucocytosis. These are given to the students, who stain and keep them. To save the trouble of cleaning large numbers of cover-glasses, we have hit upon the happy idea of asking each student at the beginning of the course to clean up six covers and contribute them to the general supply. Clinical material for such diseases as leukemia, malaria and pernicious anemia not always being available, a considerable collection of stained and mounted films is essential. We have found that Wright's stain is sufficiently permanent for this purpose. Our collection at Tufts numbers about 2,800 slides. There are ten sets of 200 slides each, eleven sets large enough to supply one section at a time, and a constantly increasing number reserved for purposes of demonstration. There is a card catalogue containing clinical records of all cases represented. Specimens are loaned to be kept throughout the course, and the students are encouraged to borrow specimens from the collection other than the required ones.

In carrying out this somewhat elaborate plan we have felt the need of brief, printed directions for the students' guidance — something on the plan of that excellent little book, "Outlines of Medical Diagnosis," prepared for the use of students in the Harvard Medical School. We have accordingly prepared a "Laboratory Note Book," which will be used next year. The first part consists of brief directions for carrying out the ordinary steps in the examination of the blood. It is interleaved with blank pages for notes and drawings. The last part consists of clinical histories of the cases in the collection, the blood from which is studied. Each case occupies a page, and the pages are interleaved with blanks for recording results. The method thus becomes an adaptation of "case teaching." The student reads the history, the results of physical examination and the estimation of corpuscles and hemoglobin. Then he examines the films and finally discusses the case with an instructor.

Such a notebook need not be printed and bound in the ordinary way. With the typewriter and neostyle its pages can be reproduced very cheaply, punched and fastened into a stout brown paper cover. This permits of frequent editions—at least one every second year—and allows new sheets to be inserted as new cases are added to the collection.

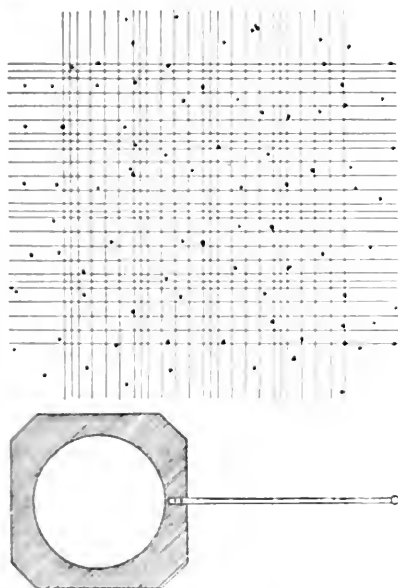


Chart and Diaphragm for teaching use of Counting Chamber.

Wall-charts illustrating such things as the structure of the counting apparatus, and colored ones illustrating normal corpuscles and their morbid alterations are easily prepared. They should be made on cloth-backed paper and kept in a large portfolio. The diagram shown in the accompanying figure has proven of considerable help in teaching the use of the counter. Nothing is more difficult than to teach a beginner to use the ruled chamber; the difficulty arising from the fact that the instructor cannot look through the microscope at the same time as the student actually point out the cells as they are counted. To remedy this difficulty the diagram is made to represent the counting chamber with the corpuscles upon it. A diaphragm mounted upon a handle and having an aperture corresponding to the field of the microscope may be moved over the chart and each corpuscle pointed out as it is counted. It is easy then to show that the slide is moved about in this way that this corpuscle touching a boundary line is counted or ignored. Or a student may go to the chart, take a pointer and count the cells represented—a

proceeding that makes his errors at once evident to the instructor. When he has learned the method from the chart, he can turn to the microscope, apply his knowledge and clinch it by practice.

The demonstration of microscopical specimens is often of little value. Hours may have been spent in preparing a display, but the student too often passes along the row of instruments, looks through each in a perfunctory manner and carries away no impression at all. One is reminded of a motto by Van Steen which hangs in the laboratory of histology at the Harvard Medical School, and which has been translated by Professor Minot:

"What good can light or lenses be
When owls look and will not see!"

The student is much more apt to see what he looks at if the demonstration is arranged with the idea of helping him in the individual problem that he is at the moment trying to solve. To illustrate: In the specimen of pernicious anemia studied last year, each student was required to demonstrate megaloblasts. Yet many hunted for more than an hour before they were successful. Meanwhile a series of demonstrations were prepared, showing amongst other things nucleated reds in their various varieties, as well as other structures frequently mistaken for them. By referring to these specimens the student found he could answer questions that his own work had demonstrated. Demonstrations so used are of much greater value than when shown by themselves.

The labor of preparing demonstrations is very considerable, but it may be materially decreased if some system of records is devised whereby desired slides and desired objects on such slides may be found at once without searching. At Tufts, as has been said, we have a collection of slides for this purpose, and a memorandum book kept to aid in its use. There are several methods of finding a particular field desired. The simplest is to swing out or remove the condenser, tip up the microscope and mark a ring on the bottom of the slide about the center of the objective. In finding the same field later one only has to focus with the low power on the bottom of the slide and the ring, raise the objective, center the specimen and replace the dry lens with the immersion. Much labor is saved by this little expedient.

Lectures are of much less value than laboratory instruction, yet they cannot be wholly dispensed with. In our course they are given every Monday before the meeting of the first laboratory section. The subject matter of the lecture corresponds with the laboratory work of the week. Thus the first four cover technique and are rather demonstrations than lectures. It is easy to demonstrate the method of preparing the cut to a class of seventy in a small, well-lit lecture hall, or to a section of twenty crowded about a desk in the laboratory. In the lecture room also techniques not of enough importance to be taught in the laboratory may be discussed, and, in general, the work for the week may be laid out. In the

last part of the course, too, when diseases of the blood are being considered in the laboratory, the lectures run parallel to the laboratory work. They are in part explanatory of the laboratory work to come, and in part are devoted to criticisms of the work of the week just finished. Diseases of the blood are considered as a whole, not merely in their laboratory aspects. The lecture room is inferior to the clinic for the purpose of bringing before the student clinical pictures of disease types, and is even more inferior to the laboratory for teaching hematological findings, but it will always be the most practicable place to discuss theoretical considerations, such as the metabolism of iron, the "leukemia question," pathogenesis and historical and literary matters. Here, too, it is helpful to use freely the lantern and apparatus for opaque projection.

Textbooks are of little importance in this subject. We encourage our students to use the literature and place standard works at their disposal, but no systematic reading is required.

Marks and examinations are a necessary evil, but they are none the less so if they are improperly managed. In grading the students at Tufts we take into consideration the daily work in the laboratory (40%), a practical examination (20%) and a written examination (40%). In the practical examination the students are asked to perform one of the common hematological procedures, such as counting the white corpuscles, and to report on a specimen smear or identify a series of normal and abnormal blood cells placed under microscopes and indicated by pointers. This examination is conducted in sections. In marking the students on their daily work in the laboratory, we consider not merely the accuracy of the work, but also the care of the apparatus. The *vis a fronte* of ambition is often insufficient to make a student wipe his lenses or dry his pipette without the *vis a tergo* of a possible "docked" mark. A possible betterment of his mark, too, will often stimulate a student to do extra work outside the classroom.

The relations between a laboratory course in hematology and the general clinical courses in medicine ought to be very close indeed. The technique of counting, staining and the examination of smears is best taught in the laboratory under the guidance of one head, but many teachers in clinical lectures or in small sections at hospital or dispensary must share in the demonstration of cases. Students working in small sections, or acting as assistants in clinics, or preparing cases for conferences or reports, or doing research work, should receive from the instructor in hematology every possible assistance by the loan of apparatus and otherwise in studying blood conditions in actual cases of disease. In short, everything possible should be done to encourage the student to use his technical knowledge, lest, as so often happens, he relegate it to the limbo of the forgotten.

In arranging instruction in hematology, it must always be borne in mind that the subject is a practical one. A study of the catalogues of a number of medical schools will lead one to

suppose that laboratory instruction in this branch is quite frequently given only in connection with laboratory departments like pathology or chemistry. In some schools it forms part of special departments of clinical microscopy or clinical pathology. It seems far better that the subject should be taught as a clinical one by the department of clinical medicine. If the student is not taught to make blood examinations by those he looks up to as his teachers in practical matters, he will never use his laboratory technique in his own practice. This is a matter of the greatest importance. If the student could see in the hospital clinic every case whose blood he examines in the laboratory it would be greatly to his advantage. For obvious reasons this is impossible. Still at Tufts we try to bring it about as often as we can. Cases of hematological interest are demonstrated in the hospital amphitheater by the instructor in hematology. Enough smears are made from each case so that each student may have one for study in the laboratory. A few are permitted to do the counts and hemoglobin. Pure "paper cases," whose blood alone is seen, possess no such interest as these. When, as occasionally happens, such a case comes to autopsy and the organs can be demonstrated, we feel that we have made a long step towards establishing in the student's mind the close relationship that should exist between laboratory and clinic.

PRURITUS ANI: ITS ETIOLOGY AND TREATMENT.

BY T. CHITTENDON HILL, M.D., BOSTON,
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THE writings and teachings of some of our most eminent authorities on the subjects of dermatology and proctology enshroud the condition known as pruritus ani with a good deal of mystery. "At a recent meeting of the British Medical Association at Oxford, an interesting discussion took place, in the Section on Dermatology, on the causation and treatment of pruritus ani; any one reading that debate cannot fail to be struck with the enormous number of distinct diseased conditions to which this annoying symptom was attributed by the various speakers, and large as the number of supposed causes assigned were, the various plans of treatment advocated were still greater. All the resources, not only of the Pharmacopeia but of the extra Pharmacopeia being in turn favored."¹

Hence we find among the profession conflicting views in regard to the nature of the disease and a wide diversity of opinion as regards the best methods of treatment.

Some maintain that the itching is due to such gross lesions as internal hemorrhoids, anal fissures, fistule, prolapsus recti, etc., and are greatly surprised that operative treatment has not resulted in a cure. When these conditions are not found the patient is considered neurotic

¹ Bull: Brit. Med. J., 1905, i, 113.

and but scant sympathy is wasted on the unfortunate individual.

Others are in the habit of attributing the cause to some constitutional disease, as diabetes, rheumatism, gout, tuberculosis, or syphilis, and their treatment is principally constitutional and dietetic. However, neither of these views seems reasonable to the writer and practical experience in the treatment of this annoying affection has proved the cause, in the vast majority of cases, to be far different.

In this consideration it is proposed to discuss only the more chronic and aggravated forms of pruritus ani, such as are commonly associated with characteristic changes in the peri-anal skin. Slight transitory itching is not to be included.

Symptoms.—The picture of a typical pruritus case, with which nearly every practitioner is familiar, is much as follows: The patient, generally a man of otherwise robust health, tells you he is a martyr to an itching so intense that pain in comparison would afford him much relief. In fact his greatest aim in life is to find a panacea for this affliction which is rendering life almost intolerable. He has dictated himself in every possible manner, he has used all kinds of local applications, he has taken internal remedies of every description, he may even have been operated upon, and has gone in vain from one physician to another seeking a cure.

He feels that in certain instances his medical attendant has made light of his ailment, in others they did not understand his case, and that he is getting worse instead of better. Now can we offer any hope of permanent cure to these patients? I believe that in nearly every instance we can and that it is frequently the most inveterate cases that yield most readily to treatment.

Pruritus ani should be regarded as a symptom caused by an unnatural moisture or discharge which is produced by either lesions about the anus, or by congestion or some pathologic condition in the rectum or sigmoid. This constant discharge, even though slight and scarcely discernible, eventually brings about pathognomonic changes in the structure of the epidermis in this region.

It is of a mildly inflammatory nature and is in reality a dermatitis which passes into the chronic form when the skin loses its natural color and presents a sordid, blanched appearance.

Treatment. The most important thing is to find out and eliminate the exciting cause. Next in importance, or rather equally important, is that appropriate treatment be instituted which will tend to restore the skin of this region to its normal state. At this juncture it might be advisable to state that only those who are willing to observe details should undertake the care of these patients. Very little can be left to the patient even after the cause has been removed.

The exciting causes and their treatment will be considered in the order of their frequency as follows:

(1) Ulcerations or abrasions of the anal canal.

This lesion is very constant and should always be sought for. Mr. F. C. Wallis² of London, first called attention to the frequency with which it occurred in pruritus. He maintains that 90% of all cases may be attributed to this cause.

His method of treatment, briefly described, is as follows: The ulcer is cocoonized by the injection of a few drops of the solution immediately beneath it. This elevates the lesion so that it can the more readily be cauterized with the galvanic cautery knife. After this it is smeared with vaseline and an opium suppository inserted in the rectum. In very bad cases when there is considerable ulceration, Mr. Wallis is in the habit of using a general anesthetic in order that the sphincters may be stretched and the actual cautery used.

Three years ago I had an opportunity of seeing Mr. Wallis treat a large number of cases* by this method, and was greatly surprised that the cure of such a small lesion as was sometimes discovered would so quickly relieve the patient of the intense itching. Since then in my own practice I have often demonstrated the fact that the whole cause of the pruritus may be attributed to a very small ulcer or abrasion of the mucous membrane of the anal canal.

(2) Catarrhal diseases. The rectum in such instances is never entirely free from feces, a condition which is productive of chronic forms of proctitis, sigmoiditis, superficial ulcerations, etc. The passage of flatus at such times allows a small quantity of mucus to escape, thus irritating and rendering moist the anal region.

These patients are best treated by securing soft evacuations of the bowels at least once in every twenty-four hours, by means of a suitable aperient taken at bed-time. After the bowels have moved in the morning they should be washed out with a half pint of a 4% boric acid solution. Furthermore it will be found beneficial to make stimulating applications of silver nitrate or balsam of Peru to any abrasions or ulcerations which may remain. This is best effected with the proctoscope, with the patient in the knee chest position.

(3) External hemorrhoids are more frequently the cause of pruritus than internal ones. These ragged tarsi of redundant skin render it almost impossible for the patient to properly cleanse the anal region after defecation. This persistent fecal soiling sooner or later produces a dermatitis in persons predisposed to its occurrence. This variety of hemorrhoid may be easily removed after injecting with a 1% solution of eucaine. The wound may be allowed to heal by granulation, yet if the base of the hemorrhoid was broad it is better to close it with catgut sutures. When the folds are numerous only two or three should be removed at one time lest anal contraction take place.

(4) Situated from 3 to 9 mm. above Hilton's white line are several small pockets, the functions of which are still under discussion, yet it is

¹Wallis, Brit. Med. J., 1905, i, 1029.

*These patients were treated at St. Mark's Hospital for Diseases of the Rectum, London.

generally conceded that they have something to do either with the storing or secreting of rectal mucus.

These little pockets will admit a probe, which has been bent upon itself, from $\frac{1}{4}$ to $\frac{1}{2}$ an inch, and by means of the anoscope³ which I have devised they may be readily seen and explored. The thought had frequently occurred to the writer that these little crypts when inflamed or infected might not functionate properly. This being the case they produce an over-abundance of rectal mucus which would escape at the anal orifice.

Thus they would account for the moisture present whichever theory we may hold as to their normal physiological function. For instance, if we believe them to be reservoirs then when diseased they may fail to take up the normal rectal mucus, while on the other hand, if we consider that their function is productive, if diseased they would produce an excess of mucus (blenorragia).

However it may be I have, in a few instances in which there was no other ascertainable cause for the pruritus, succeeded in curing my patient by swabbing out these little pockets with stimulating lotions of 5% silver nitrate, or balsam of Peru, 5%.

Growing from the margins or surfaces of these valves one frequently finds little white projections or teats which can be made out by the exploring finger. Stroud⁴ explains their presence here as "accessory sense organs of a higher degree of development than the major part of the pecten, and not pathological outgrowths." Whatever their nature may be it is certain that when hypertrophied they are prolific of many distressing sensations about the anus.

Among them may be mentioned, uneasiness in the rectum, such as a "creeping," "crawling" sensation, and a feeling of incomplete relief after defecation. Quite frequently pruritus is the most prominent symptom.

The treatment of these cases is very satisfactory. It consists in snipping the growths off with a pair of nasal scissors as they protrude through the window of the anoscope.³ It is best to apply a strong solution of cocaine before removing them.

(5) Small polyps of the anal canal, protruding internal piles, prolapse of the rectum and anal fissures, as well as other conditions, do doubtless occasionally cause itching about the anus, but very seldom in the writer's experience are they the cause of an old chronic or inveterate pruritus ani.

When encountered, however, associated with pruritus, they should be dealt with according to their special surgical indications.

Now, notwithstanding the fact that the exciting cause has been discovered and eliminated, it is necessary to direct appropriate treatment to the unnatural skin before much amelioration of the itching can be expected. It seems probable that

it is the product of a chronic inflammation of the skin, with more or less thickening and infiltration, which in some way throws out of gear the "simple nerve endings which exist so abundantly in the epidermis." It is this departure from the normal which produces the sensation of itching; therefore it is our task to make such applications as will restore the skin to normal.

At the beginning of treatment it is of prime importance that the necessity of absolute cleanliness should be remembered by both surgeon and patient.

The patient should be instructed to thoroughly cleanse the anal region after defecation, preferably with absorbent cotton which has been wrung dry of some antiseptic solution.

The parts should be protected from friction and the irritation of the discharge by wearing day and night an anal pad held in place by a T-bandage. The pad is best made with absorbent cotton wrapped with but one thickness of sterilized gauze. Too many thicknesses of gauze when ointments are used absorb the greasy portion of the ointment, and shortly the anal region becomes dry and coated with only its irritating mineral ingredients.

The methods of applying and removing ointments are such important matters that in the first few weeks of treatment the patient should be seen daily by the surgeon. To simply give instructions to use some of the ointment morning and night will inevitably result in failure.

Those cases in which the dermatitis is acute (eczema ani), accompanied by many excoriations from scratching and rubbing, require applications and ointments of a soothing and protective nature.

However, in the class of patients which are here especially referred to, the skin is nearly always tough and leathery and covered with dead and sodden epithelium.

The local appearance is very typical and once seen can never be mistaken.

The problem in these cases is to bring about a gradual destruction of this new formed epidermis, without too much inconvenience to the patient, and I know of no agents that serve the purpose better than nitrate of silver and citrine ointment (ung. hydrarg. nit.) rightly applied. Dr. Lewis J. Adler, Jr., of Philadelphia, first called attention to their use in the treatment of pruritus ani.

At the first visit the peri-anal skin is painted with a saturated solution of nitrate of silver. Provided any abrasions present are previously anesthetized with a 10% solution of cocaine this should occasion no discomfort. The application of the silver should be repeated at intervals of four or five days until all the dead epithelium has been removed. After the silver has dried the anal region is smeared with citrine ointment. I have observed that individual skins differ in their reaction to this ointment and one should always be cautious when making a first application.

It is best to reduce the strength of the ointment by the addition of an equal quantity of lard for

³ Hill: Jour. Am. Med. Assoc., 1906, xlvii, 585.

⁴ Stroud: Ann. of Surg., 1896, xxiv, 1.

the first visit, and then gradually, if the skin of the patient will permit, increase it to full strength. The ointment should be perfectly prepared, as any gritty particles render it unfit for use. The patient is seen daily for the first two weeks, and then every other day for a like period. After this, once or twice a week until the skin has regained its original color, suppleness and elasticity.

Ordinary cases may be cured in four weeks, yet one should be guarded as to prognosis, as stubborn cases will often require as many months.

During the past two years I have treated at my office and at the Boston Dispensary fifty-two cases of pruritus ani, and where the treatment has been conscientiously followed up I have had almost universal success.

To illustrate the methods of treatment five are selected at random and their histories and treatment briefly appended.

CASE I. Mr. S., age thirty-four, occupation, business man, was referred to me in April of last year. He had pruritus for twenty years. During the past three months he could sleep but little at night because of the intolerable itching. He had been under treatment by a New York proctologist eight years ago, but had received no permanent relief.

Rectal Examination.—Numerous excoriations from scratching about the anus. Perianal skin sodden and blanched looking. Two large and one small external piles. Mucous membrane of anal canal congested and inflamed.

Treatment.—April 4, under eucain $\frac{1}{4}$ of 1%, the three external piles were removed, and a dry dressing was continued for six days. Then the following daily treatment was begun: The rectum was irrigated daily with boric acid solution. Every four or five days the skin about the anus for two inches was painted with a saturated solution of nitrate of silver. This last had to be repeated four or five times. A pad of cotton covered with sterilized gauze and smeared with citrine ointment was worn continually day and night for the next two months. The treatment was continued daily for two weeks, then every other day for the next two, and once a week for the next month.

Was under treatment two months in all, but the itching disappeared after the first two weeks' treatment. There has been no recurrence to date.

CASE II. March, 1905. Mr. S., age forty; lawyer. Symptoms began gradually a year and a half ago. Described in his own language they are: Feels as though there was something live under the mucous membrane. At times, especially after the bowels move, there is a "creeping" sensation just inside the anus. Cannot sleep nights. Has been the rounds of general practitioners and one rectal specialist. In fact, he has become neurotic on the subject.

Rectal Examination.—Greatly hypertrophied sphincters and four hypertrophied anal papillae.

These little growths were removed by the method previously described, and Mr. S. has been free from rectal symptoms since.

CASE III. Another case similar to the one just reported was that of a Boston physician, forty-five years old, who had had pruritus for sixteen years. In this case there was an eczema involving the perineum and scrotum.

These papillae were discovered, removed, and the most distressing symptoms subsided at once, yet he even now occasionally has slight itching. His symp-

toms, however, were so greatly relieved that being a very busy practitioner, he neglected then necessary after treatment which should have been undertaken to cure the eczematous condition of the perineum and scrotum.

CASE IV. Aug. 1, 1905. Dr. M., a dentist, thirty-eight years old. Had been a great sufferer from pruritus for twelve years. His itching was caused by very small superficial ulcerations (three or four) of the rectum and sigmoid. These were treated locally, and the external treatment was the same as in Case I. He was under treatment six weeks and has since remained well without treatment.

CASE V. Aug. 1, 1905. Mr. A., age forty, was referred to me for a very bad pruritus. He was a high liver and indulged rather freely in alcohol. Duration of disease three years. Did not get more than three or four hours' sleep at night. Of late has been sleeping in steamer chair aboard his yacht, as that is about the only way he gets any rest.

Rectal Examination.—Small posterior ulcer located between the sphincters.

Treatment.—His mode of living was not in any way interfered with. The small posterior ulcer was cured with lactic acid applications and the same external dressings as in Case I were used. There was no itching after the first week's treatment, and no recurrence to date. He was under treatment eight weeks.

The cardinal principles to remember in treating pruritus are:

Cure all affections of the anal canal and rectum, no matter how trivial they may seem, as they do cause an irritating moisture of the parts.

Maintain absolute cleanliness by protection of the parts from friction by the wearing of a T-bandage with a pad.

Make local applications for the restoration of the altered skin to normal, using strong caustics when required.

Clinical Department.

A CASE OF PSORIASIS CURED BY LAPAROTOMY AND CURETTAGE.

BY CHARLES F. STEVENS, M.D., DORCHESTER, MASS.

MRS. E. H., twenty-seven years old, blond, always strong and healthy, except for constant leucorrhoea following birth of child six years previous; bowels regular; fond of candy; menstruations normal, but rather free.

In March, 1903, she had severe attack of tonsillitis, which so closely resembled diphtheria that 5,000 units of antitoxin were given while awaiting culture reports, all of which were negative. Five weeks later punctiform macules appeared on face and body, scaly and itching, with tenderness of muscles and painful joints. The patches slowly increased in size and number until pretty nearly the whole body, including scalp and face, and excepting palms and soles, was covered with the blisters, scaly patches, some of which, around the umbilicus and scrotum, coalesced to form areas as large as the palm, while most of them did not enlarge to the size of a dime.

Different internal and external remedies were used without much effect, including mercury and potassium iodide, as the sore throat, followed by the eruption, suggested syphilis. The subsequent history, however, eliminated this disease. Vaginal examination revealed

a large, retroverted uterus, with a polypus projecting from the external os, and a small fibroid on the posterior wall of the fundus. The cervix was slightly torn on the left side. There was an offensive viscid discharge. An operation was advised for the removal of the tumors, for restoring normal position of uterus, for relieving leucorrhœa, and as the best chance of curing the psoriasis. The patient refused surgical treatment.

The disease assumed more and more of a chronic nature until finally, six months after its appearance, it began to gradually fade, and by the following January, 1904, had entirely disappeared. The next September it appeared again and progressed steadily until in December the patches were more thickened and hyperemic than at any time during the previous attack, and her face looked so badly to the patient that she would not venture out of doors. Operation was again strongly advised and agreed to.

She was taken to the Moultrie Street Hospital, Dorchester, and on Jan. 4, 1905, after curetting and removing polypus, I performed a laparotomy, removed a small fibroid and attached, the uterus to the anterior abdominal wall. Four days later the eruption seemed much improved, and in two weeks was not visible on the face. She made an uneventful recovery from the operation, and on the fifteenth day left the hospital.

On March 1, less than two months after the operation, there were no visible signs of the eruption, except a slightly erythematous appearance, around the umbilicus and sacrum, where the most indurated patches occurred. Up to the present time there has been no recurrence of either the psoriasis or the leucorrhœa, and she is at present a superb specimen of health. The neuralgia in the joints did recur for a time, and was so intense occasionally that safe doses of morphia would not control it. The shoulders and elbows were the principal seats of the pain.

Unfortunately, the cause of psoriasis is unknown. While it has some characteristics which would seem to suggest a parasitic origin similar to the ringworm fungi, this belief does not generally prevail. Vasomotor neurosis, neuralgia, an inherited sequel of syphilis, tuberculosis, rheumatism or gout are ascribed as causes. It has been called a deformity rather than a disease of the skin. It has appeared after vaccination and scarlet fever, in other words, when there has been an irritant circulating in the blood.

Psoriasis is, in my opinion, a manifestation of a toxicosis, the neuralgia which sometimes occurs with it and which is attributed as a cause, being simply another manifestation. The case above reported would agree with this theory. Either the streptococcal infection of the throat, the administration of antitoxin, or the infected endometrium, one or all, on the one hand, or the reflex irritation of the retroverted uterus and the tumors, on the other, furnished the cause. Relieving the leucorrhœa, which was kept up by the polypus and the displaced uterus, in all probability effected the cure. A laparotomy diet for one or more weeks may not be without beneficial effects, if psoriasis is due to an auto-intoxication.

JAPAN'S HALT AND BLIND.—According to the Nagasaki press Her Majesty the Empress had presented 984 artificial eyes and 1,797 limbs to soldiers injured during the recent war.—*Medical Record*.

Medical Progress.

REPORT ON PROGRESS IN DERMATOLOGY.

BY JOHN T. BOWEN, M.D.,
AND
HARVEY P. TOWLE, M.D., BOSTON.

THE SPIROCHETE PALLIDA IN SYPHILITIC LESIONS.¹

Bodin gives in this article the results of his examination of 37 cases. He found the spirochete pallida in 10 out of 16 chancres examined. Three of these 6 negative cases had used a calomel ointment on the lesion and 3 were over two months old and were cicatrizing. From 17 cases of secondary syphilis he obtained a positive result in 10. The 7 negative cases comprised one untreated case with a roseola, one with aeneiform syphilide, who had been treated for several days, one with an erosion of the vulva to which permanganate of potash had been applied and one case of a moist lesion on the palpebral commissure from which the material for examination had been removed under unfavorable conditions. Two cases of tertiary syphilis also gave a negative result. Of two cases of hereditary syphilis, one, a child fifteen days old with a pemphigoid eruption on the extremities and an interstitial hepatitis, gave a positive result. The other, a macerated fetus, was negative. Several non-syphilitic lesions examined were invariably negative. Bodin concludes from these results that the presence of the spirochete pallida is constant in the untreated and still evolving syphilitic chancre and also in the secondary papular, papulo-squamous, ano-genital and erosive syphilides. He is certain that the germ is so sensitive that it can easily be made to disappear by applications of mercury or of the ordinary antiseptics. Mercury given internally works in the same way so that its use for five or six days is enough to render the microscopic examination negative. His researches brought out two points which impressed him especially. All the authors give the number of spirals as varying from four to fourteen. Bodin has seen the organism with more than fourteen but close examination has convinced him that in such instances he had to do with two stuck together end to end. He also found in the same preparations bifurcated spirochete in the form of a letter Y. These he regards as evidences of the active multiplication of the germ at the moment of longitudinal division like the trypanosomes, and in that stage where the two individuals born by division are still adherent by their extremities. He was also struck by the fact that in all of his preparations the microbes were most abundant in the parts which were richest in red blood corpuscles. This points, he thinks, to the desirability of obtaining for the examination material which contains blood.

SPIROCHETE OF SCHAUDINN FOUND IN THE LIVER AND SPLEEN OF A MACERATED FETUS.²

At the December, 1905, meeting of the Société Française de Dermatologie the authors reported

¹ Bodin: *Ann. de Derm. et Syph.*, December, 1905, p. 984.

² Queyrat, Levaditi and Feuille, *Ibid.*, p. 982.

that they found the spirochete pallida in the liver and spleen of a syphilitic eight-months fetus. The mother had had syphilis five years before, for which she had taken pills of the protoiodide of mercury for seven months. The fetus was found to be macerated externally and internally, the liver being especially affected. The spirochete pallida were found in sections of the liver and spleen and were especially abundant about the vessels. The authors believe that this case proves the etiologic relationship of the spirochete of Schaudinn to syphilis beyond a doubt. They argue that here was a fetus born of a syphilitic mother, dead before birth and, therefore, unable to take in any organism either by the digestive or respiratory apparatus, in whose liver and spleen they found at autopsy an abundance of the spirochete of Schaudinn and no other microbe, with the greatest number in the liver as is the rule in infections by way of the placenta. They believe that the case shows further that the microbe can exist for a long time in a living and transmissible state in an imperfectly treated syphilitic.

THE SPIROCHETE OF SYPHILIS. MORPHOLOGY AND CLASSIFICATION.²

¶ Burnet considers the etiological rôle of the spirochete pallida in syphilis as practically settled in view of the fact that the only link missing in the chain of evidence is the experimental inoculation. The morphology and classification, however, are still in doubt, which has led Burnet to review Schaudinn's work in order to show how the latter's opinions changed as his investigations progressed and also to present the present status.

Schaudinn and Hoffman found two forms of microbes in the serum obtained from a primary lesion of syphilis. One was easily stained by the usual methods, had large spirals, was stumpy and was strongly refractile. The other was difficult to stain, had fine spirals, was thinner and was only slightly refractile. The first they called spirochete refringens, the second spirochete pallida. The second they considered to be the active agent in syphilis. In their early articles they ascribed the following characteristics to the spirochete pallida: a length of from four to ten μ , a width always less than one-half μ , from three to twelve fine, almost angular spirals. The organism has a characteristic motion which consists of a rotation on its longitudinal axis with displacements in front and behind together with flexion of the whole body. There are no flagellæ. The ends are pointed and in some there is seen an indication of a wavy membrane which suggests the morphology of the trypanosomes.

In a later article, published in October, 1905, Schaudinn modifies some of these views as the result of more extended investigation. He still speaks of the tenuity, the feeble refraction and the difficulty of staining, but he now places the number of spirals at from ten to twenty-six. He doubts the existence of the wavy membrane

mentioned in his earlier article. On the other hand, he says that he has demonstrated by means of the Loeffler bacterial stain a single long cilium at each pole.

In regard to the differential diagnosis, Schaudinn emphasizes the necessity of prolonged and energetic staining in order to obtain satisfactory preparations. As distinguished from the other forms of spirochete the pallida is more pointed, has more spirals, is more difficult to stain, is paler than the other forms with the same stain and finally it is thinner and longer. Schaudinn at first classed his microbe among the spirochete but as a result of this later work he now believes that it is not a true spirochete because it possesses numerous and pointed spirals which are an integral part of the body of the organism as is shown by the fact that they do not disappear after death as do the spirals of the true spirochete, because they have no wavy membrane and because they have flagellæ. He concludes that it is, therefore, a microbe of a new type. Burnet goes on to say that these new characteristics noted by Schaudinn bring the pallida nearer the spirillum group. These, however, have a bouquet of flagellæ about the poles instead of only one as in the pallida. Because of this doubt as to the classification of Schaudinn's microbe, Villenim of Nancy has suggested, with Schaudinn's consent, that the name be changed to *spiroplasma pallidum*.

THE INOCULATION OF SYPHILIS UPON APES.

Neisser publishes his third communication upon this subject since he began his experiments in Java.³ He met with many unexpected difficulties, such as the collection of proper syphilitic material, since the native Malay population seldom present themselves during the incubation periods. The maintenance of the animals was also found difficult, as many of them died from intestinal affections. He used an enormous number of animals, about 9000, of which a small proportion, naturally, were of the anthropoid species.

Many interesting facts were brought out, although it cannot be said that any very important results were attained. As in the human subject, the time of incubation was several weeks, in the majority of cases three to five, seldom less. The inoculations were made by deep scarification and rubbing the material thoroughly in. No particular difference could be made out between the different species of monkeys with respect to the appearance of the primary manifestations. The primary glands were found to offer an especially valuable material for inoculation, especially the peripheral parts of the glands. Only once was he able to record a successful inoculation from a tertiary product. He is inclined to think that the passage of virus from animal to animal causes it to become more active. Naturally, the higher apes were more susceptible than the lower, and the lower apes could only be inoculated on the eyebrows and

² Burnet: *Ibid.*, November, 1905.

³ Deutsch. Med. Wch., 1906, No. 13.

genitals, whereas in the higher apes any part of the body was susceptible.

In common with the results of other observers Neisser was unable to inoculate the animals by subcutaneous injection, nor to produce immunity in that way. While it was found that lower apes could be inoculated comparatively easily with primary lesions of other lower apes, and that orang-outangs could be inoculated easily with spleen and bone marrow of lower apes, it was seldom that lower apes could be inoculated cutaneously with spleen and bone marrow of other lower apes.

With regard to the spirochete pallida, it was found that it was almost constantly present in syphilitic efflorescences, and in far greater profusion than other spirilli. This is important as indicating the specific character of the spirochete, inasmuch as spirilli and allied organisms are especially abundant in Java, in purulent secretions from the skin and mucous membranes. They were found in greater numbers in the serum obtained after deep curetting than from the superficial secretion. They were also found in efflorescences that were not broken open and in lymph glands. They were not found in tertiary lesions. Neisser is rather skeptical as to the possibility of always distinguishing the spirochete pallida from other forms of spirochete by its form, if the origin of the material to be examined is unknown. He is also skeptical as to the value of this discovery for practical diagnostic purposes, when no spirochete are found in the tissue under examination. In 12 fresh, typical cases of human syphilis and 8 syphilitic apes, the spirochete could not be found. He admits, however, that these figures would probably have been smaller had a longer time been given to the search for the organisms. Neisser considers that these micro-organisms in all probability have a causal relationship to syphilis. This is shown by the almost constant finding of them by experienced observers in the secretion blood and tissues of both hereditary and acquired syphilis, in men as well as in apes, by their presence in the primary lesion of an ape that was inoculated with the blood of a syphilitic man, by their absence in affections other than syphilis, and by their characteristic form.

CONTRIBUTION TO THE QUESTION OF THE LOCALITIES CONSIDERED TO BE RARELY AFFECTED IN TUBERCULAR LEPROSY.⁵

Bjarnhedinsson, the physician in charge of the leper hospital in Reykjavik, publishes some interesting cases relating to this question. It is well known that leprous nodules appear only rarely on the flexor side of the extremities, the chest, abdomen, serotum and penis. Hansen and Looft had never found nodules upon the glans penis, palms of the hands, soles of the feet, or upon the scalp. Some rare cases of palmar and plantar leprosy have been published by Crocker and others.

The writer's experience in the leper hospital

of Reykjavik is an interesting exception to what has just been cited. He has examined 53 patients with tubercular leprosy since 1901, with the result that he found 26 affected with leprous nodules upon the soles of the feet. These nodules were sometimes multiple, sometimes isolated. They were found partially or totally ulcerated. He remarks that the only disease which one is likely to confound with plantar leprosy is syphilis, but that Iceland has, so far, pretty generally escaped a visitation from this disease, it being confined to a few isolated cases in the towns.

With regard to palmar leprosy, 10 of 52 patients with tubercular leprosy examined were found to be affected in this place.

In 12 patients from the 52 examined, there were found to be lesions in the scalp, either nodules, or circumscribed or diffused infiltrations. In most of these cases there was an alopecia corresponding to the localization of the lesions.

Of 32 cases, 12 showed pathological changes in the male genital organs.

In the same number of Lepra, Charles Nicolle, director of the Pasteur Laboratory in Tunis, describes an experimental inoculation of leprosy on a monkey. Two patches of skin were excised from a case of tubercular leprosy, one of which served for a microscopic examination to control the diagnosis. On the 24th of November, 1904, a few minutes after its excision, the other piece was macerated in sterile water and inoculated upon a female "bonnet chinois" in several places; first, upon the frontal region upon both sides after superficial scarification; second, upon the conjunctiva of the right eye by rubbing, without previous excoaration; third, upon the two nasal mucous membranes, which had been previously excoarated; fourth, under the skin in front of the left ear; fifth, in the pavilion of the ear.

Another monkey belonging to a kindred species was inoculated at the same time in the same manner except that he was not inoculated in the tissue of the pavilion of the ear, while several drops of virus were injected into the peritoneal cavity. The reason why he determined upon so many points of inoculation was the failures of his predecessors. The nasal region was considered especially hopeful as it had probably never before been inoculated, and as leprosy appears to begin frequently in the nose in the human subject.

Four days after the inoculation, every trace of it had disappeared in the two monkeys. After two months no symptoms were observed. It is remarked that the two monkeys at the time of the inoculation were in perfect health. On the 29th of January, the 62d day, the left pre-auricular region of the "bonnet chinois" became slightly elevated, and a small subcutaneous nodule, hard, irregular and painless, was detected. The same lesion was observed on the other monkey, but the nodule was smaller. During the next two days the lesion increased in size in the case of the first monkey and the skin became

⁵ Lepra, vol. v, Fasc. 3.

adherent and of a dark red color. On the 4th of February, a new lesion appeared in the same animal, consisting of two small red nodules seated in the pavilion of the ear and a cordlike induration uniting the two lesions could be felt.

From this time until the 11th of February the appearance of the lesions has remained the same, while their size has somewhat increased. The preauricular nodule of the "bonnet chinois" was then excised. Microscopically the corium showed several small nodules made up of accumulations of lymphocytes and of mononuclear leucocytes. There were no giant cells, nor was there any trace of caseation, and the vessels did not appear to participate in the inflammatory process. The leprosy bacilli were in comparatively small number, situated solely, or almost solely, in the cells. They contained one or two or several leprosy bacilli, while one that was seen contained a dozen. Large lepra cells filled with an enormous number of bacilli, such as are found in man, were not seen. This is the only difference, and the writer thinks it may have been due to the difference in age. In these cells the leprosy bacillus had its ordinary characteristics; it was usually rather short — shorter than the tubercle bacillus. Most of the bacilli were deeply stained by the Ehrlich method, and some presented the well-known granular aspect. The writer concludes that there is no doubt that the disease produced was leprosy, and offers hope that the experimental study of this infection will become possible in the future. Experiments were being made to determine if this lepra of the monkey was re-inoculable upon the infected monkey and could be re-inoculated from this animal upon a new monkey.

THE INFLUENCE OF LIGHT IN THE PRODUCTION OF CANCER OF THE SKIN.⁵

Hyde discusses the various theories of the etiology of cancer, observing that a decided reaction seems at last to have set in against the tide that bore in the direction of its parasitic origin. Many of the bodies which it was once thought were parasites have been proved to be irregular cell inclusions. Hyde's purpose in the present paper is to draw attention to a certain group of facts which give promise to the lines of future advance. The idea was suggested by a recent study of three cases of xeroderma pigmentosum.

It would seem that xeroderma pigmentosum offers an object lesson for the study of cutaneous cancer. The disease is uncommon, only about 100 cases being on record. (While the disease is rare, many typical cases have not been reported, so that it is not so exceptional as these figures would indicate. Rep.) It begins usually in the second year of life as a cutaneous hyperemia followed by a pigmentation of the exposed parts of the body, which takes the appearance of brown or black freckles. There is hyperemia of the lids, conjunctivitis and photophobia.

After the freckles, angiomas begin to form, which, interspersed with the freckles give an extraordinary variegated appearance to the skin. Finally, verrucous growths appear on the affected parts and, later, epitheliomatous growths, usually multiple and often of a most malignant nature. The malignant growths may occur at an early age or the disease may run quite a long course, before a fatal termination.

Unna and others who have studied this question claim that this chain of events is due to the weakened resistance of the skin of the young child to the more refrangible rays of the solar spectrum, the hyperemia and pigmentation being simply different endeavors to paralyze the injurious influence of light, the surface hyperemia acting like the red light of the photographer in excluding the ultraviolet and blue rays. In this case then we have a true formation of cancer in childhood directly due to the more refrangible rays of the solar spectrum and limited to the exposed parts of the body at first.

Carcinoma of the sailor's skin has also been described, in which the ears, cheeks, temples, backs of the hands become at first pigmented, later verrucous and epitheliomatous. Here the histological appearances are quite similar to those of xeroderma pigmentosum.

As in these instances cancer occurs obviously as a result of exposure to light, the question naturally arises whether all cutaneous cancers are not influenced by the actinic rays. The physiological and pathological effects of ultra-violet rays, x-rays, the Becquerel and radium rays are similar. They produce in the skin, first, hyperemia, second pigmentation, third atrophy, fourth "cancerosis." Telangiectasis often occurs as a secondary consequence. The first two changes are obviously protective in character.

The senile skin is instanced in which the well-known pigment deposits may be regarded as an effort to protect the integument from the chemical rays to which the subject has become extraordinarily susceptible.

An examination of the census reports of the United States for the year 1900 shows that a large proportion of the deaths from cancer of all organs in males occurred among people who have an out-of-door occupation, and of these men who are engaged in agriculture afford the greatest number. It is not believed that this is due to greater exposure to the weather, as has been maintained, as the farmer is practically not as much exposed as are other classes among which cancer is not prevalent. Those who work in atmospheres of extreme cold are not subject to cancer of the skin. Cancer is almost unknown in Iceland, Greenland or the Faroe Islands. In Alpine regions the "cold burn of the face" is due to exposure to the ultraviolet rays and not to frost. That heat rays are not responsible for the preponderance of cancer among those with out-of-door occupations is suggested by the immunity reported in the inhabitants of Arabia, Egypt and North and South Africa. If this is true, the most natural explanation is the

⁵ J. Nevins Hyde: *Am. Journal of the Med. Sciences*, January, 1906.

protection afforded by the colored skin of the large part of these inhabitants.

It is further shown by figures that in the United States the inhabitants of cities suffer less from cancer than does the rural population, also that it is more prevalent in the northern than in the southern states. A map is inserted showing graphically that cancer is most prevalent in the eastern, central and northwestern states.

The writer's conclusions are:

1. The skin of the human body in a certain proportion of individuals, and in these only, is hypersensitive to the action of the actinic rays of the spectrum.

2. This hypersensitiveness may be exhibited in the production of either hyperemia, pigmentation, telangiectasis, atrophy, hyperkeratosis or cancerosis of the skin, or by all, at times, in a determined order of succession.

3. In the form of childhood cancerosis known as xeroderma pigmentosum, the pigmentation, telangiectasis, atrophy, hyperkeratosis and cancerosis of the skin resulting from exposure to rays of light are exhibited early in life, instances of this disorder being exceedingly rare.

4. Pigmentation, telangiectasis, atrophy, hyperkeratosis and cancerosis of the skin occur in adults much more frequently than in childhood, reaction to the play of actinic rays of light upon the surface being chiefly determined after the middle period of life has been reached.

5. Physiological pigmentation of the skin in the colored races seems to furnish relative immunity against cancerosis of that organ.

Reports of Societies.

THE MEDICAL JURISPRUDENCE SOCIETY OF PHILADELPHIA.

STATED MEETING, MONDAY EVENING, MARCH 19, 1906, AT 8.15.

The President, DR. HENRY W. CATTELL, in the Chair.

QUACKERY: WHAT ARE WE GOING TO DO ABOUT IT?

The above title was the subject of an address by Hon. CHAMPE S. ANDREWS, official counsel of the Medical Society of the County of New York. Mr. Andrews described the laws of the state of New York and their successful application against illegal practitioners in the metropolis, and gave suggestions for similar action in this city.

A great cause of surprise is the fact of the different classes of society interested by the quack: The lawyer from one view; the doctor from an entirely different standpoint; the student of religions from a still different view. There is much to attract the sociologist and the criminologist. Among the different branches of the healing art which the quack in his various parts took up were mentioned those of the occultist; the water-curst; the electropath; the fraud pure and simple, who claims to be a physician; the osteopath; the vitapath; the fraud who practices on the consumptive poor; the so-called specialist in diseases of men; the patent medicine quack. Mr. Andrews recounted specific instances of quackery and of arrests. One instance was that of a Mrs. Browning Weaverson,

who belonged to a cult which claimed to cure disease by the application of human waste. The patient was a woman of sixty years of age with cancer of the leg. For five days a plaster composed of human waste of the patient had been applied. Gangrene had set in and the patient was at the point of death. Another was that of a Jew named Benjamin, who practiced among the women of the East Side, claiming to have a drug which cured sterility. About twenty-five women had appeared in court who had taken the drug, the effect of which was to cause a swelling of the abdomen.

The midwives were said to be the most difficult class of quacks to convict. They are most effectively reached through the post-office authorities. The water-cure fad seems to dominate the German section. A curious fact brought out in these trials is that almost every quack when brought into court has somebody who has been deceived into believing that he has been greatly benefited. Among the electropaths was one Roher, who had established a diploma mill, operating chiefly among Swedish immigrants. Fifty of these graduates had been convicted. Roher was himself the head of what might be called the massage trust of New York. He is an example of the men who use electricity and claim that they are free from the medical law. In this class are the quacks who have the so-called electric chair, electric shoes, electric trusses, etc. There was mentioned in this class the illustrious case of "Professor Hildreth," who supplied the magic boot. This man, formerly a cobbler, had a list of twenty diseases which he claims to cure. The chief victims are those suffering from congenital hip disease. One room, which he called the chamber of horrors, was filled with braces taken off of patients originally applied in scientific hospitals in New York. When arrested, he had in his safe sixty contracts, each calling for one pair of boots at \$500. Few quacks have done so much harm as this one. An account was given of the Koch quack who had represented himself as being associated with the celebrated Dr. Koch. Action has been brought against him which will make impossible the existence of the Koch Lung Institutes.

A case of special interest was that of a carpenter, rejected for life insurance on account of a slight condition of the kidneys, who had fallen into the hands of one Kane, who was professing to cure by the use of radium. He greatly exaggerated the man's condition, but said that if he could afford to buy of him a certain quantity of radium, which would cost \$10,000, he could cure him. The man actually did get together \$9,872, which he paid the quack, being treated for about a year. An arrest followed for grand larceny, and the man is now serving a term in the penitentiary. A vial filled with a greenish-colored fluid, claimed to be the so-called radium, and which had been taken from the safe of the quack was shown. The vial was about an inch and a quarter in diameter, and the part which was said to have cost \$10,000 was about an inch in depth.

The professional abortionist will not give drugs because this makes his conviction easy. It was said that Mr. Jerome has been petitioned to have the law amended, making it a crime to offer or contract to perform an abortion. Under the present law the offender must be caught red-handed to be convicted. Mr. Andrews said that when every state shall have a comprehensive medical law, the profession will have a medical instrument which will enable them to check the practice of almost every class of medical quackery, except the man who is a charlatan inside of his own profession. In referring to the attitude of the newspapers toward quackery, it was the opinion of Mr.

Andrews that in their acceptance of the advertisements of the so-called specialists in diseases of men, abortionists and patent medicine dealers, active assistance was given to the evil. He believed the time would come when the newspapers would be obliged to give up these advertisements, as some were now voluntarily doing. The president of the Board of Health of New York has sent to the County Society over one hundred complaints against illegal practitioners. A police officer is detailed to the work of the Society and does nothing else. The court sets aside a day in the week for the trial of these cases. There is the problem of much work to be done with but a small amount of money, but Mr. Andrews believes that the profession of New York will awake to the necessity of asking the general public to contribute toward the carrying on of the work which in reality affects the general public more than the profession. While much has been accomplished, Mr. Andrews believes that if the work were neglected for twelve months, the city would be again overrun with quacks. He believes there should be some organized body behind the movement, some concentric effort made to enforce the laws. He urges the formation of an organized body with a charter under the general corporation laws of one of the states. Should the American Medical Association, organized as it now is in every state of the Union, undertake the splendid work of suppressing the quack, he believed the work would be attended with much success.

Dr. SAMUEL G. DIXON, health commissioner of the state of Pennsylvania, thought the time had come when the members of the profession should present to the legislature a bill empowering the state Medical Examining Board to revoke the license of a physician practicing as a charlatan or a quack. He felt that physicians should take as much pride in having a high standard of honesty and honor in the profession as did the members of the Bar. In his opinion the law makers are ready to pass laws forbidding the sale of medicine unless the label be printed in full, detailing the formula.

Dr. JOHN B. ROBERTS said he did not believe that the patent medicine or the quack evil is entirely a disease of the community, but a disease, to a certain extent, of the medical profession. The ease with which the public is duped by those whom intelligent men in general call quacks, he said, is partly the result of quackish men in the professional ranks. The essence of quackery, he stated, is a boastful assertion of skill and infallibility, and a desire to obtain large sums of money for treating disease. The sick often seek the advertising doctor and believe the false assertions of the patent medicine label, because they have found the medical men known to them to be incapable, inefficient, or so exorbitant in fees that help seems impossible at their hands. The family which can obtain efficient medical aid for a moderate fee never at home does not often drift into the hands of the recognized quacks.

Dr. Roberts declared that the college which graduates an ignoramus, the state examining board which gives a license to an unfit applicant, and the physician who places an unjust value on his services, or who deceives his confiding patient, are potent agents in encouraging quackery. Some years ago, he said, the alumni of various medical schools were obliged to compel their alma maters to stop the output of half-educated graduates, and the profession has had need to be on the alert that medical examining boards did not permit improper men to obtain licenses to practice. These sources of supply of quasi-physicians, Dr. Roberts said, had now been pretty satisfactorily checked. There remain, however, the secret remedy

prescribers, the commission-giving consultant, and the big-fee doctors to be disciplined by the medical profession itself.

Dr. HENRY BEATES said that the inability to carry out successfully the prosecution of quacks is due to the feebleness of the Act of Assembly governing such matters. Efforts had been made to so amend the present law that to the usual fine there should be added a term in the penitentiary; also conferring the power to revoke the license of a practitioner who carried out quackish methods. These attempts to elevate the standard, he said, had met with opposition from every commercial medical college in the state of Pennsylvania. In connection with Dr. Roberts's reference to illiterate graduates, Dr. Beates read the remarkable answer given by an applicant for state license to a question propounded by the Medical Examining Board. It showed absolute lack of knowledge of the subject. Dr. Beates strongly urged the organization of a movement to correct the evil of quackery.

THOMAS W. BARTOW, Esq., of the Philadelphia Bar, said that if an organized effort were made to prosecute offenders in Philadelphia as was being done in New York, there must of necessity be a change in the police rule; for, while in New York a day each week is given by the courts to the work of the Society, in Philadelphia, were an arrest made, it would take from thirty to sixty days to secure an indictment and probably six months to obtain conviction.

Dr. S. SOLIS CORNEI said that it was especially difficult to control the evil when men who are looked up to as leading lights, founders of colleges, etc., use their political influence against the effort. He felt that the medical profession as a whole, and the medical press in particular were not free from contamination with the patent medicine evil. He expressed the hope that those interested, not of the medical profession, would point out to the newspapers the wrong they were doing in printing many of the objectionable advertisements. Until the medical press was clean, he felt that the profession could not work in this direction. He doubted whether the American Medical Association were the body to lead in an organized movement against quackery; but felt that it might properly co-operate with a national body such as the lecturer had suggested, and that it would be quite proper for the Philadelphia County Medical and other bodies of physicians interested in the work to co-operate individually and collectively with such an organization.

Regarding the suggestion of so amending the medical laws that a license may be revoked, he thought it would be unjudicious to place such power in the hands of any other body than a court, and that a license should be revoked only by order of court after a full judicial hearing.

Dr. BENJAMIN FRIZZER said that there were as many quacks in geology and chemistry, possibly, as in the practice of the healing art. They were not, however, perhaps so well known. He felt that Dr. Dixon could speak authoritatively of the different kinds of professions entirely permeated with quackery. He felt that the practical application of the ideas suggested by Mr. Andrews to other professions than those of medicine would be of much value.

Dr. DIXON, referring to Mr. Bartow's mention of police laws of Philadelphia, said that the state now has a law sufficiently broad to cover the questions under discussion.

Dr. ANDREWS, in closing, said that while it was well to discuss such problems, they could only be solved by hard, conscientious and efficient work. His plea was for practical beginnings, which were bound to come to full fruition.

Recent Literature.

The Physical Examination of Infants and Young Children. By THERON WENDELL KILMER. M.D., Adjunct Attending Pediatricist to the Sydenham Hospital; Instructor in Pediatrics in the New York Polyclinic Medical School and Hospital, New York; Attending Physician to the Summer Home of St. Giles, Garden City, New York. Illustrated with 59 half-tone engravings. 12mo. Pp. 86. Philadelphia: F. A. Davis Company, Publishers.

The author states in his preface that he "makes no pretense as to outlining physical diagnosis nor pathological conditions of any kind whatsoever; his only aim is to instruct the student and physician how to examine a baby." He has not, however, adhered as strictly to his text as he might have done. We think it would have been better if he had written a larger and more comprehensive treatise, as this one is, from its small size, necessarily incomplete and unsatisfactory. The photographs and methods of examination are, on the whole, good. We are glad to see that the author approves of a stethoscope with a small bell, rather than of the phonendoscope or the naked ear, and that he includes a tape measure in his outfit. We do not approve of the percussion hammer in preference to the fingers in the examination of infants and do not believe that the infant's back can be satisfactorily auscultated while it is lying on its face. The examiner in Fig. 29 appears to be listening to the liver. We doubt the correctness of the areas of the absolute cardiac dullness as portrayed in the photographs and are surprised that the more important relative dullness is not given. While many other criticisms might be made, this little book is fairly good as far as it goes and should prove useful to beginners.

Materia Medica, Pharmacy and Therapeutics, including the Physiological Action of Drugs, the Special Therapeutics of Disease, Official and Practical Pharmacy, Minute Directions for Prescription Writing and Avoiding Incompatibility, also the Antidotal and Antagonistic Treatment of Poisoning. By SAM'L O. L. POTTER, A.M., M.D., M.R.C.P., London. Formerly Professor of the Principles and Practice of Medicine in the Cooper Medical College of San Francisco; author of the "Quiz-Compend of Anatomy and Materia Medica," "An Index of Comparative Therapeutics," etc. Tenth edition. Revised, and in greater part rewritten. Philadelphia: P. Blakiston's Son & Co. 1906.

This well-known book does not need an extensive review. The present edition has been largely rewritten and is brought into accord with the new (1905) United States Pharmacopeia. It is well arranged and contains a mass of information. In its scope it covers more ground than most books on the same subject.

A Textbook of Human Physiology. By ALBERT P. BRUBAKER, Professor of Physiology and Hygiene in Jefferson Medical College. Pp. 715. Philadelphia: P. Blakiston's Son & Co. Second edition. 1905.

Since the first edition of this textbook, reviewed in these columns last year, Professor Brubaker has taken the opportunity to prepare additional statements relating to the chemistry of the proteids and of digestion, the movements of the intestines, the production of lymph, the nerve mechanism of the heart, and the physiology of vision. These additions have been made to the second edition.

Lippincott's New Medical Series. Edited by FRANCIS R. PACKARD, M.D., The Medical Diseases of Infancy and Childhood, with points on the Anatomy, Physiology, and Hygiene peculiar to the Developing Period. By ALFRED CLEVELAND COTTON, A.M., M.D., Professor of Pediatrics, Rush Medical College, University of Chicago; Attending Physician for Diseases of Children, Presbyterian Hospital; Consultant to the Central Free Dispensary, etc. Pp. 670. Philadelphia and London: J. B. Lippincott Company. 1906.

It is impossible to review a book of this size in detail. The arrangement is unsatisfactory and the terminology bad, diseases and symptoms being hopelessly confused. While it is easy to pick out minor defects, the text on the whole is very satisfactory. The book is full of good sense and sound advice. It is fully up to date in every way. The author is a little too much inclined to give all the theories on debatable points and not quite willing enough to commit himself as to his own opinions. The directions for treatment are practical and rational.

A Reference Handbook of the Diseases of Children. For Students and Practitioners. By PROF. FERDINAND FRÜHWALD, of Vienna. Edited, with additions, by THOMPSON S. WESTCOTT, M.D., Associate Professor of Diseases of Children in the University of Pennsylvania. Octavo volume of 553 pages, with 176 illustrations. Philadelphia and London: W. B. Saunders Company. 1906.

As we have already remarked about several other books recently translated from other languages, it hardly seems worth while to translate second-rate books into English when there are first-rate books in English and in other languages. This book is distinctly second-rate. Much stress is laid on the alphabetical arrangement with numerous cross references. This seems to us sufficient of itself to condemn the book. Much space is given to treatment which is much more elaborate and more heroic than that commonly used in this country. We fear that it would not agree with American babies. The illustrations are excellent and to the point. The additions by the editor, Dr. Westcott, are very good. We regret that Dr. Westcott did not write a book himself instead of translating some one else's.

THE BOSTON
Medical and Surgical Journal.

THURSDAY, MAY 24, 1906.

A Journal of Medicine, Surgery and Allied Sciences, published at Boston, weekly, by the undersigned.

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CHANGE OF PUBLISHERS. ANNOUNCEMENT.

BEGINNING with this issue the JOURNAL will be published by D. C. Heath & Co., of Boston. This firm has long been favorably known as a publisher of books relating to education, and has recently begun the publication of medical books. It has, therefore, seemed fitting to the managers of the JOURNAL that its publication should be undertaken by a concern which has the best interests of medicine at heart. In making this change there will be no radical alteration in the long-established policy of the JOURNAL as an independent medical organ owned and controlled by a board of medical managers, except in the way of such gradual expansion as we trust its continued success will both justify and necessitate. We bespeak, therefore, the loyal and increased patronage of the medical profession.

REPORTS OF PUBLIC INSTITUTIONS. PAUPER INSTITUTIONS DEPARTMENT AND BOSTON INSANE HOSPITAL.

UNDER the increasingly unfortunate and misleading title of the Pauper Institutions Department, the ninth annual report of the institution at Long Island has recently appeared. We have continually protested against the use of the term "pauper" in connection with an institution which has become essentially a hospital for chronic disease. Nothing could more definitely indicate this hospital tendency than a perusal of this report, which is taken up essentially with a consideration of the medical needs and medical statistics of the institution.

The trustees draw attention to the increasing

feebleness of the population and to the fact that the character of the entire institution is steadily progressing toward that of a great chronic hospital requiring enlargement and improvement along hospital lines. Although a virtual distinction is made between the hospital department and other buildings, it is pointed out that some of the wards in the dormitories are to all intents and purposes hospital wards. It is also worthy of note that nearly nine hundred cases, or practically 75% of all admissions, were sent directly to the hospital, which must be regarded as a most significant fact. The tuberculosis problem at Long Island is not a new one, nor is it one easily to be met under existing conditions. Complete segregation at present is absolutely impossible owing to lack of room, so that both men and women are of necessity cared for in general wards. It should be borne in mind that the erection of a consumptive hospital elsewhere will not relieve Long Island to an appreciable extent. It is not to be supposed that patients will not be forthcoming in spite of whatever provision it is proposed to make for them elsewhere. If they are admitted, they should be segregated far more than is at present possible. The trustees have done all in their power toward this end, but without more room palliation of the present condition must remain imperfect.

The situation regarding the training school for nurses also demands attention. The nurses' home is too small; more nurses are needed, not only because of the exceptional difficulty of the work they are called upon to do, but also because the nursing staff has not kept pace with the increase in hospital population.

The report of the visiting medical staff is largely a reiteration of what has often been said before, but which must be repeated until the public is awakened to the full necessities of the situation. The staff again urges the establishment of a hospital for chronic disease, which shall absolutely exempt its patients from the stigma of pauperism. There is no more important question than this before the trustees of the institution and through them before the people of Boston. The time must be near at hand when disease of whatsoever character shall be looked upon as worthy of the most enlightened care under the best obtainable social status. It is worthy of comment that the resident house officer staff has been increased from four to six, and that the visiting medical staff has also been increased, which has conduced to greater regularity of visits and to improved care of the patient.

During the past year Dr. Abner Post has resigned his position on the staff. Dr. Post was the first to be appointed when the medical reorganization of the Long Island institution was undertaken, more than ten years ago. The institution owes much to his wisdom and foresight in the early days of the attempt to establish hospital methods. In general, it may be said that apart from the misleading name the Long Island institution to-day stands as a hospital of high rank. Its complete recognition as such should be quickly forthcoming.

The ninth report of the trustees of the Boston Insane Hospital likewise indicates progress in that part of the city's work. We find a small increase in the number of patients treated over that of the preceding year, with the usual and justified complaint of lack of room. Facilities for the treatment of the increasing number of patients is demanded both in the men's and women's department. The trustees urge further that the land now under lease should be owned by the hospital. It is also suggested that small buildings on the colony system be erected for certain of the men patients. Dr. William Noyes has succeeded Dr. Edward B. Lane as superintendent. It will be remembered that Dr. Lane resigned his position some time since under stress. Dr. Noyes in his report calls attention to a recent law which extends from sixty days to six months the time during which patients may be away on trial visits without necessitating new commitment papers. This is a step in advance and should tend toward a juster estimate of the final mental conditions of the patients.

NEW YORK BAY POLLUTION BILL.

MAYOR McCLELLAN, of New York, has signed a bill, passed by the recent legislature, known as the New York Bay Pollution Commission Bill, which provides for a commission to consider means for protecting New York Bay from pollution. This bill is the result of the labors of a previous commission, of which Dr. Daniel Lewis, recently the head of the State Department of Health, was chairman, and Dr. George A. Soper, the well-known sanitary expert, one of the members. This original commission was appointed in 1903 to investigate certain matters connected with sources of pollution and a special threatened defilement of the waters of New York Harbor. It spent two years in investigating the questions at issue, presenting its report to the Governor in April, 1905. The bill

then proposed was not, however, introduced into the legislature, as the session was too near its close, but, under authority of Chapter 701 of the Laws of 1905 the life of the commission was extended to April 30, 1906.

The bill which now goes into effect provides for the appointment by the Governor of a new commission of five members, three of whom are to be engineers, who shall serve until May, 1909. In connection with a similar commission which the state of New Jersey is to be asked to appoint, they are to prepare and submit by the expiration of their term of service an outline plan for the initiating and governing of a permanent metropolitan sewerage commission covering portions of both states, New York and New Jersey, that final body to have powers of investigation and planning for the future disposal of sewage or other polluting matters which now do and which must for some years to come continue to reach the waters of New York Harbor. The new commission is to be known as the New York Metropolitan Sewerage Commission, and, in addition to the five appointed members, the state engineer and surveyor, the state attorney-general and the Mayor of the city of New York are by the terms of the bill constituted members of the commission. To provide for the expenses of the commission the city controller is authorized to sell corporate stock to the amount of \$16,000.

The members of the commission will receive no salary, but are to be paid their necessary expenses incurred in the prosecution of their duties, and the five citizen members are each to be paid a reasonable *per diem* compensation, to be determined by the Governor, for the time actually and necessarily employed on the work of the commission. It is sincerely to be hoped that this commission will succeed in devising at as early a date as practicable a comprehensive plan for future development, to safeguard the health and comfort of a vast population. While similar boards for drainage and water questions have been established in Massachusetts, the peculiar and important interstate conditions involved in the present instance have not had to be taken into consideration by them.

MEDICAL NOTES.

AMERICAN CLIMATOLOGICAL ASSOCIATION. — At the twenty-third annual meeting of the American Climatological Association, held in Atlantic City, May 12-14, the following officers

were elected for the ensuing year: President, Dr. Thomas Darlington, of New York City; vice-president, Dr. Frank Fremont Smith, of Washington, D. C.; secretary and treasurer, Dr. Guy Hinsdale, of Hot Springs, Va.; councillor, Dr. E. L. Shurly, of Detroit. Dr. E. L. Trudeau, of Saranac Lake, and Dr. Leonard Weber, of New York, were elected honorary members. The next meeting will be held in Washington, D. C., May, 1907.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON.—For the week ending at noon, May 23, 1906, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 41, scarlatina 29, typhoid fever 8, measles 83, tuberculosis 50, smallpox 0.

The death-rate of the reported deaths for the week ending May 23, 1906, was 19.80.

BOSTON MORTALITY STATISTICS.—The total number of deaths reported to the Board of Health for the week ending Saturday, May 19, 1906, was 214, against 198 the corresponding week of last year, showing an increase of 16 deaths and making the death-rate for the week 18.75. Of this number 116 were males and 98 were females; 210 were white and 4 colored; 137 were born in the United States, 66 in foreign countries and 11 unknown; 49 were of American parentage, 139 of foreign parentage and 26 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 34 cases and 5 deaths; scarlatina, 26 cases and no deaths; typhoid fever, 6 cases and 2 deaths; measles, 85 cases and 1 death; tuberculosis, 43 cases and 21 deaths; smallpox, no cases and no deaths. The deaths from pneumonia were 33; whooping cough 3, heart disease 25, bronchitis 4 and marasmus 5. There were 11 deaths from violent causes. The number of children who died under one year was 35, the number under five years 60. The number of persons who died over sixty years of age was 50. The deaths in public institutions were 74.

There were 2 cases and 2 deaths reported from cerebrospinal meningitis during the week.

A GIFT TO THE BOSTON CITY HOSPITAL.—The children of the late Mrs. A. Shuman have recently given to the Boston City Hospital a large collection of books to be placed in the wards. This gift is to be known as the Hetty Lang Shuman Memorial Library and starts with twelve

hundred volumes. A fund has also been deposited with the city treasurer, the interest of which is to be used for the purchase of new books and for other purposes pertaining to the library.

MASSACHUSETTS MEDICAL SOCIETY, MIDDLESEX EAST DISTRICT.—Officers, 1906-07: H. G. Blake, M.D., president; C. W. Harlow, M.D., vice-president; Harold A. Gale, M.D., secretary; Charles Dutton, M.D., treasurer. Councillors: G. N. P. Mead, M.D., F. E. Park, M.D.; S. H. Parks, M.D.; R. T. Edes, M.D.; A. H. Cowdrey, M.D. Censors: F. E. Park, M.D., Supervisor; M. A. Cummings, M.D.; E. S. Jack, M.D.; G. F. Dow, M.D.; W. H. Keleher, M.D. Auditor: Lilley Eaton, M.D.

DARTMOUTH MEDICAL COLLEGE ALUMNI ASSOCIATION.—At the annual meeting of this Association, held at Concord, May 17, the following officers were elected: President, Dr. W. A. McGrath, of London; first vice-president, Dr. R. V. Baketel, of Methuen, Mass.; second vice-president, Dr. D. R. Goodhue, of Springfield, Mass.; secretary and treasurer, Dr. H. N. Kingsford, of Hanover.

ONE HUNDRED AND FIFTEENTH ANNUAL MEETING OF THE NEW HAMPSHIRE STATE MEDICAL SOCIETY.—The one hundred and fifteenth annual meeting of the New Hampshire State Medical Society was held in Concord, May 17 and 18. There was an unusually large attendance. Dr. F. A. Stillman, of Concord, presided and delivered the annual address. The House of Delegates organized for business with a majority of the delegates present. Its meetings were largely occupied with a consideration of the question concerning the acceptance of contract work by members of the society. After considerable debate, the delegates reported to the society in favor of the enforcement of the policy of expelling from membership in the society all those who persisted in performing contract work. This includes professional work of that character in connection with fraternal societies. The annual banquet was held at the Eagle Hotel, about two hundred members being present. Dr. G. P. Conn, who has served the society as secretary for thirty-seven years, retired from that office. The following officers were elected: President, Dr. Ira J. Prouty, Keene; vice-president, Dr. John H. Neal, Rochester; secretary, Dr. D. I. Sullivan, Concord; treasurer, Dr. D. M. Currier, Newport; neurologist, Dr. L. I. Graves, Pennacook.

NEW YORK.

ANNIVERSARY OF MT. SINAI HOSPITAL TRAINING SCHOOL FOR NURSES. — On May 15 the training school for nurses of Mount Sinai Hospital celebrated its twenty-fifth anniversary and on this occasion sixteen young women were graduated. Three of the graduates were recipients of the Murray-Guggenheim scholarships, amounting to \$1,000 each.

FORTIETH ANNIVERSARY OF ST. BARNABAS'S HOSPITAL, NEWARK, N. J. — The fortieth anniversary of the founding of St. Barnabas's Hospital, Newark, N. J., was celebrated during the second week in May. It is stated that by painstaking efforts the endowment fund of the institution has been nearly doubled within the past two years, and now amounts to about \$80,000. In connection with the anniversary exercises, on May 9, the new nurses' home, erected at a cost of \$23,000, was formally opened.

REPORT OF SANITARIUM FOR HEBREW CHILDREN. — The twenty-eighth annual report of the Sanitarium for Hebrew Children has just been issued. The objects of the Society controlling the sanitarium, and of which Dr. Samuel Kohn is president, are to give free trips on land and water to destitute and sick children of the Jewish faith and to supply them with medical attendance. During the year 1905, 2,028 patients were treated in the sanitarium, as against 1,513 in the preceding year, and about 20,000 children were taken on seashore trips. At the annual meeting on Jan. 9 the need of an additional building was presented, and Mr. Jacob H. Schiff headed the subscriptions for this purpose with a gift of \$10,000. Since then a sufficient fund has been raised, and the new building is now rapidly approaching completion. It will be large enough for 175 beds, making the total capacity of the institution 335 beds. The sanitarium is located at Rockaway Park on the Long Island shore.

EXTENSION OF WATER SUPPLY OF NEW YORK. — The State Water Supply Commission of which Ernst J. Lederle, ex-President of the City Health Department, is one of the members, has unanimously approved, with some slight modifications, the plan of the city's commission for an extension of the water supply of New York into Ulster County, at an estimated expenditure of \$160,000,000. The city, before it takes possession of lands in the area required, must pay to the owners a sum equal to half of the assessed value of the property, make compensation for buildings or improvements on lands entered, and also pay

damages for decreasing the value of property, as well as for the deprivation of employment to persons engaged in manufacturing establishments the business of which may be injured or destroyed. This approval by the State Commission permits of the beginning of the work at once.

CONDEMNATION OF POLICE STATIONS. — The Health Department has officially condemned thirty-three police stations in the Borough of Manhattan, and unless the Board of Estimate and Apportionment is willing to provide \$2,000,000, which Police Commissioner Bingham has requested for new stations, the Department may close the stations as public nuisances and compel the city to provide temporary quarters for prisoners and for the sleeping accommodations of policemen. This would be an enormously expensive as well as unsatisfactory makeshift. The action of the Health Department in the matter may be regarded as a triumph for the Society of Medical Jurisprudence. The bad condition of the police stations, in which the plumbing and other arrangements are in violation of the provisions of the Sanitary Code and most of which are very old buildings, was first brought to the attention of the Society in a paper by former City Magistrate Ommen, who became familiar with the unsanitary conditions during his official service. The Society at once took action, and the President, Dr. Carl Beck, appointed Judge Ommen chairman of a committee to make a full investigation. Dr. R. W. Wilcox acted as medical expert on this committee and in due time an elaborate report was presented, setting forth that the thirty-three police stations now condemned were unfit for human use and calling upon the Health Department to take official action in the matter.

Obituary.

DR. ESTHER H. HAWKES.

At a special meeting of the New England Hospital Medical Society, held May 21, 1906, it was

Resolved, That in the death of Dr. Esther H. Hawkes, of Lynn, Mass., the Society has lost one of its oldest and most honored members, whose life has been an inspiration and example to successive generations of medical women.

Resolved, That while deploring this loss to the profession, we also extend to her family our sincere sympathy in their bereavement.

Dr. Hawkes was born May 6, 1834, and died at the age of seventy-two, May 7, 1906.

Dr. Hawkes served as surgeon in the Civil War, assisting her husband, Dr. J. M. Hawkes.

BLANCHÉ A. DENIG, *Secretary*,
New England Hospital Medical Society.

Miscellaneous.

OPENING EXERCISES OF LABORATORIES OF THE ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH.

THE opening exercises of the laboratories of the Rockefeller Institute for Medical Research were held at four o'clock on Friday, the 11th of May, in the new building, a five-story structure of stone and brick, plainly but practically constructed and equipped with every form of apparatus needed for the carrying on of its work. The location is at Sixty-sixth Street and Avenue A, on a high bluff which overlooks the East River, Blackwell's Island and Long Island, and covers twenty-six and a half city lots.

The assembly rooms were somewhat small, but filled, together with the main hall leading from them, with an audience, many of whom were men active in progressive medicine and in general scientific pursuits. Among these outside New York were Mr. Henry Phipps, Dr. W. W. Keen and Dr. Flick, of Philadelphia, Dr. John S. Billings, Dr. D. C. Gilman, of Washington, and Dr. H. P. Walcott, of Boston.

The exercises were opened by a few remarks by Dr. Wm. H. Welch, of Johns Hopkins, the president of the Board of Directors of the Institute, who then introduced the first speaker, Dr. L. Emmett Holt, secretary of the board. In his address Dr. Holt gave a sketch of the development of the Institute and told of the early work done in its establishment, outlining in brief the policy. In part he said:

"In considering what use should be made of the funds at first placed at its disposal to make them immediately productive of some scientific results, and at the same time, to get a general view of the field, the board decided not to centralize work in a single place, but to create a number of scholarships or fellowships to be distributed in existing laboratories throughout the country. In this way it was hoped several ends might be attained; first, to enlist the co-operation of various investigators in different places; secondly, to aid some promising lines of research which could not be continued for lack of funds; and, finally, to discover who and where were the persons who desired to undertake research work and what were their qualifications.

"From a large number of applications received, twenty-three grants were made to eighteen different laboratories in this country, and three men were sent abroad to pursue special investigations, two in Ehrlich's laboratory in Frankfurt and one in Koch's Institute in Berlin."

The laboratory building was begun in July, 1901, after eighteen months of study and thought over the plans, during which time five of the directors visited Europe in order to profit by the experience of other institutions of a similar character, and was completed a few weeks ago, representing an outlay of about \$320,000.

In 1903 Dr. Simon Flexner was elected director of the laboratories, and at that time having a staff of four men under him. The present staff is composed of the following persons:

Department of Pathology and Bacteriology: Drs. Simon Flexner, E. L. Ohne, H. Noguchii, J. L. Sweet, H. S. Houghton, Department of Physiology: Drs. S. J. Meltzer, John Auer, Department of Chemistry:

Drs. P. A. Levene, W. Beatty; Resident Fellows and Scholars: B. F. Terry, zoology; R. D. McLaurin, chemistry; Chas. A. Roniller, chemistry; E. H. Shore, bacteriology; Bertha J. Barker, bacteriology.

Many applications for positions in the Institute have been received from England, France and Germany; but the feeling of the Directors has been that it was the American type of mind with its genius for practical results that was wanted, and this has made the board doubtful as to the wisdom of choosing European heads for any of its departments. Many young men and women were found in this country with evident capacity, yet few possessed necessary training which should fit them to work independently. With each year's experience, the conviction has steadily grown that the Institute must in large measure train its own staff, selecting from the promising young applicants such as give evidence of a special fitness and giving them subsequently such training both here and abroad as would fit them for their special work.

To get in close touch with such a class, a number of resident scholarships and fellowships have been created. For these, thirty-one applications were received during the present year and five have been awarded. This plan, if successful, will be continued, and from this corps, from time to time, will be recruited the future workers of the Institute.

The present organization provides for the following departments: Pathology, Bacteriology, Physiology and Pathological Chemistry, Physiology, Comparative Zoology. To these it is expected that a department of Experimental Therapeutics will soon be added.

The fully organized staff will consist of a chief director and a head for each of the different departments. Each head will have his associates and corps of assistants. The heads of departments, associates and first assistants it is expected will constitute the permanent staff of the Institute. The other workers will be less closely attached. Besides, there are contemplated scholarships and fellowships for workers who may come for a limited period; and, finally, it is expected to provide for a limited number of voluntary workers who will be given the facilities of the Institute for working out, under supervision, their own problems.

While the purpose of the Institute will be research, not instruction, it cannot fail to exert a considerable influence in medical education, since many of those who will receive their training within its walls will, doubtless, go elsewhere to assume positions of responsibility in teaching institutions.

The present scientific staff consists of fourteen persons; the laboratory building when fully equipped, will furnish facilities for about fifty workers.

Much work must always be done in the fundamental subjects of chemistry, biology, physiology and pathology, for upon these basic sciences, future discoveries in medical science must largely rest. While fully realizing the importance of these and liberally providing for them in its laboratory, the Institute aims at the same time to keep close to the practical side, and will endeavor to apply the latest discoveries in science to problems connected with the prevention and cure of disease. In order that the greatest good may be accomplished along these lines, the board realizes that a hospital closely affiliated with the Institute is indispensable. Only in this way is it possible for those who work in the laboratory to appreciate the relation of their work to the problems of practical medicine.

From the very beginning the Institute has sought not to monopolize the field, but to cooperate with possible workers with existing agencies for medical research in this country.

While it has been impossible to tell from that a signi-

proportion even of the suitable ones asking for assistance, still an average of twenty grants has been made each year, and much excellent work done which otherwise could not have been undertaken.

With the opening of a central laboratory for research in New York, these foreign grants will necessarily become a less important part of the work. It is not, however, the intention of the Institute to discontinue them altogether. The board hopes always to be ready with a grant of money or by sending a trained man, to assist in the solution of any important emergency problem which may arise in connection with the public health in any part of the country.

After Dr. Holt's address, Dr. Welch delivered his masterly presentation of the "Triumphs of Preventive Medicine," making an eloquent appeal for scientific work in this country. He spoke of the necessity of the laboratory as a means of advancing medical science and the stimulus to research work resulting from the establishment of such institutions as the Rockefeller Institute, The Memorial Institute of Infectious Diseases in Chicago, the Phipps Institute for Tuberculosis and the Carnegie Institution, and said that these represented the beginning of a new science of medicine in America.

President Eliot, of Harvard University, made an address upon the "Needs, Methods and Rewards of Research Work in Medicine." He said in part:

"Biological research is more arduous than physical, chemical, or other inorganic research, because vital processes are difficult to observe accurately, and all the conditions of experimentation are harder to control. The medical investigator must often fish in troubled waters; and sometimes he cannot find again the promising fishing ground he has once visited, because unexpected fog prevents him from seeing the intersecting bearings of his desired ground.

"Medical research habitually strives to arrive at something beyond abstract truth. It seeks to promote public and private safety and happiness, and the material welfare of society. Its devotees have in mind the discovery of means of remedying misery or warding off calamity; and they also know that whatever contributes to health and longevity in any community or nation contributes to its industrial prosperity; so that they are justified in hoping for results from their work which will promote human welfare. In short, medical research is research in science which is both pure and applied. Some genuine scientists affect to despise applied science; and certainly it is not discreditable to men of science that they are apt to value discoveries which have no popular quality or commercial utility more highly than those which immediately attract the favor of the multitude by their industrial effects, or by their striking novelty combined with intelligibility; but all scientists recognize the fact that medical research is directly related to the largest material interests of the community, such as manufacturing, transportation, sanitation, and the methods of providing light, heat and shelter, and of defending the community against frauds in foods, drinks and drugs. Many of its problems are economic as well as medical, and require in those who study them sound judgment in money matters as well as knowledge of natural law, and skill in scientific methods of inquiry. Medical research, therefore, requires in its devotees a combination of theoretical power with practical power—a capacity for both abstract science and applied science.

* * * * *

"In spite of the fact that medical research involves the suffering and death of many of the lower animals used for purposes of study, the work of medical research is in reality the most human work now done

in the world; for its secondary objects are to prevent disease in men and animals, to defeat the foes of life, to prevent the industrial losses due to sickness and untimely death among men and domestic animals, and to lessen the anxieties, terrors and actual calamities which impair or crush out human happiness. The primary object in medical research, as indeed in all research, is the ascertaining of truth; but these secondary objects are ever before the mind of the investigator, and through them come his greatest satisfactions. These satisfactions ought to be shared by men, who, like the founder of this Institute, promote medical research by the exercise of their sound judgment and good will and by their money. The achievements of medical research since Jenner have been marvellous.

* * * * *

"May not we democrats find encouragement in the humble origin of Franklin, Faraday and Pasteur, and in the contributions democratic America has already made to anesthesia, surgery, the improvement of public water supplies, and the control of Texan fever, malaria, puerperal fever and yellow fever? May we not reasonably expect our country to produce many men like Louis Pasteur's father, a private soldier of the first Empire and a hard-working tanner? In the dedication of his best book the great son said to his father: 'The efforts I have devoted to these investigations and their predecessors are the fruit of thy example and thy counsel.'"

President Butler, of Columbia University, delivered a brief but forcible address upon the importance of the application of scientific methods to the practical problems of daily life.

The ceremonies closed with an informal dinner at the University Club given by Dr. Welch. There were present about forty members of the medical profession and guests. Speeches were made by Dr. W. W. Keen, Mr. Andrew Carnegie, Dr. Billings and Mr. John D. Rockefeller, Jr. One of the interesting features of the evening was the reading of congratulatory telegrams from the Pasteur Institute and from Ehrlich's Institute in Frankfort.

THE LABELLING OF DRUGS AND FOODS.

An act has been passed by the Massachusetts Legislature and signed, relative to the labelling of certain patent and proprietary drugs and foods, which should meet with the general approval of the medical profession. We append the bill in detail.

Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows:

SECTION 1. Upon every package, bottle or other receptacle holding any proprietary or patent medicine, or any proprietary or patent food preparation, which contains alcohol to an amount in excess of the amount shown to be necessary by the United States Pharmacopoeia or the National Formulary as a solvent or preservative of the active constituents of the drugs contained therein, shall be marked or inscribed a statement of the percentage of alcohol by volume contained therein; and the provisions of section nineteen of chapter seventy-five of the Revised Laws shall apply to the manner and form in which such statements shall be marked or inscribed.

SECTION 2. Every package, bottle or other receptacle holding any proprietary or patent

medicine or any proprietary or patent food preparation shall bear a label containing a statement of the quantity of any opium, morphine, heroin or chloral-hydrate contained therein, provided that the package contains more than 2 gr. of opium, or more than $\frac{1}{4}$ gr. of morphine, or more than $\frac{1}{8}$ gr. of heroin, or more than 8 gr. of chloral-hydrate in one fluid ounce, or, if a solid preparation, in one avoirdupois ounce; and the provisions of section nineteen of chapter seventy-five of the Revised Laws shall apply to the manner and form in which such statements shall be marked or inscribed.

SECT. 3. It shall be unlawful for any person to sell, or to expose or offer for sale, or to give or exchange, any patent or proprietary medicine or article containing cocaine or any of its salts, or alpha or beta eucaine or any synthetic substitute of the aforesaid.

SECT. 4. It shall be unlawful for any person to sell, or to expose or offer for sale, or to give or exchange any cocaine or alpha or beta eucaine or any synthetic substitute of the aforesaid, or any preparation containing the same, or any salts or compounds thereof, except upon the written prescription of a physician, dentist or veterinary surgeon registered under the laws of the Commonwealth; the original of which prescription shall be retained by the druggist filling the same and shall not again be filled.

SECT. 5. The provisions of sections three and four shall not apply to sales at wholesale made to retail druggists or dental depots nor to sales made to physicians, dentists or regularly incorporated hospitals.

SECT. 6. Whoever manufactures, sells or offers for sale any medicine or food preparation in violation of the provisions of this act shall be punished by a fine of not less than five nor more than one hundred dollars. It shall be the duty of the state board of health to cause the prosecution of all persons violating the provisions of this act; but no prosecution shall be brought for the sale at retail, or for the gift or exchange of any patent or proprietary medicine or food preparation containing any drug or preparation the sale of which is prohibited or restricted as aforesaid, unless the said board has, prior to such sale, gift or exchange, given public notice in such trade journals or newspapers as it may select that the gift, exchange or sale at retail of the said medicine or food preparation would be contrary to law.

SECT. 7. This act shall take effect on the first day of September in the year nineteen hundred and six.

A GUIDE BOOK FOR PHYSICIANS VISITING BOSTON.

So many events of national significance have taken place in and about Boston and so many famous institutions have here existed and still do exist, that a guide book for the visiting physicians seemed necessary to the committee of arrangements of the American Medical Association

Such a guide book has been prepared by a sub-committee, and will be one of the features in the entertainment of the guests.

There already exist several good guide books of Boston, notably that prepared for the National Educational Association, which was edited by Mr. Bacon and is now published by Ginn & Co. Quite naturally, however, very little space is devoted in these publications to medical matters.

To surpass these books as efficient guides to historic Boston has not been attempted, but rather to associate with an adequate guide book facts of medical history and historical accounts of medical institutions, in other words, to prepare a guide book of Boston for physicians.

It is hoped that through this book the visitors may become familiar with our crooked streets and may have their attention directed to matters of medical and historic interest. Maps of the city proper and the surrounding country have been inserted, and such interesting localities as Plymouth, Concord and Lexington, and the beautiful North Shore have been featured.

A description of the elevated and surface car lines will be found helpful in understanding a system somewhat confusing to the visitor. Lists of churches, hotels, restaurants and places of amusement, together with a full index, complete a book of about two hundred pages.

A cover design of the Old State House has been drawn by Dr. W. P. Graves, and a tail-piece by Dr. H. H. Gallison, to whom thanks are due for many helpful suggestions.

The advertisements have been carefully selected and only those medical firms which are believed to conduct their business along ethical lines have been allowed space.

An edition of ten thousand copies has been printed and will be distributed gratis to the members of the American Medical Association and their guests.

Correspondence.

FRANKLIN'S CONTRIBUTIONS TO MEDICINE.

CINCINNATI, May 19, 1906.

Mr. Editor. The article in the *Boston Medical and Surgical Journal* of May 10, entitled "Benjamin Franklin's Contribution to Medicine," was very interesting and to the point. What with the proprietary medicine controversy and medical fallacies of the present day it is refreshing to read of Benjamin Franklin, Rush and Physick.

I dare say if those men came back on earth they would be able to prove that the chemical origin of disease has more truth in it than the fashionable malarial origin or so-called germ theory. Certainly, we have a clearer idea of diseases they had our ancestors but the important historical fact must not be lost sight of, that the people of the century in which they lived and worked did, from medical ignorance, suppose some very good theories. Therefore, we would gain by studying Benjamin Franklin with an insight to the germ theory since the two contrary doctrines have been alternately masters from antiquity.

Yours truly, J. M. YOUNG, M.D.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, MAY 12, 1906.

| CITIES. | Reported deaths in each. | Deaths under five years. | CITIES. | Reported deaths in each. | Deaths under five years. |
|------------------------|-----------------------------|-----------------------------|-----------------------|-----------------------------|-----------------------------|
| New York | 1,437 | 446 | Quincy | 1 | 1 |
| Chicago | 583 | 161 | Waltham | 1 | — |
| Philadelphia | — | — | Groton | 1 | — |
| St. Louis | — | — | Pittsfield | 2 | 1 |
| Baltimore | 197 | 46 | Brookline | 4 | — |
| Cleveland | — | — | North Adams | 4 | 6 |
| Buffalo | — | — | Chicopee | 7 | 6 |
| Pittsburg | — | — | Northampton | 9 | 2 |
| Cincinnati | — | — | Medford | 6 | — |
| Minneapolis | — | — | Beverly | 5 | 3 |
| Washington | — | — | Hyde Park | 3 | 1 |
| Providence | — | — | Newburyport | 3 | 0 |
| Boston | 226 | 79 | Leominster | 3 | 1 |
| Worcester | 37 | 12 | Melrose | 5 | 1 |
| Fall River | 30 | 8 | Woburn | 5 | — |
| Cambridge | 53 | 15 | Marlborough | 4 | 0 |
| Lowell | 53 | 16 | Westfield | 1 | — |
| Lynn | 17 | 4 | Peabody | 1 | — |
| New Bedford | 25 | 2 | Revere | 1 | — |
| Springfield | 25 | 2 | Clinton | 6 | 1 |
| Lawrence | 26 | 11 | Attleboro | 1 | 0 |
| Somerville | 15 | 3 | Adams | 2 | 1 |
| Holyoke | 10 | 3 | Gardner | 2 | — |
| Brookton | 10 | 3 | Millis | — | — |
| Malden | 11 | 2 | Weymouth | 1 | 0 |
| Salem | 17 | 2 | Framingham | 3 | 2 |
| Chelsea | 2 | 1 | Watertown | 1 | 0 |
| Haverhill | — | — | Plymouth | — | — |
| Newton | — | — | Southbridge | — | — |
| Fitchburg | 12 | 5 | Wakefield | 1 | — |
| Taunton | 10 | 6 | Webster | — | — |
| Everett | 5 | 2 | | | |

CHANGES IN THE MEDICAL CORPS U. S. NAVY
FOR THE WEEK ENDING MAY 19, 1906.

F. J. B. CORDEIRO, surgeon. Having been examined by a retiring board and found incapacitated for active service on account of disability incident thereto, is retired from active service, May 9, 1906, under the provisions of section 1433, Revised Statutes.

H. C. CURRIE, surgeon. Commissioned surgeon with rank of lieutenant commander from Dec. 16, 1905.

W. S. PITCH, JR., assistant surgeon. Ordered to the "Lancaster."

JAMES MILLER, JR., assistant surgeon. Died at Midway Islands, May 13, 1906.

J. P. HAYNES, assistant surgeon. Ordered to the Naval Hospital, Washington, D. C.

H. L. BROWN, assistant surgeon. Detached from the "Texas" and ordered home to wait orders.

J. D. MANCHESTER, assistant surgeon. Ordered to duty at the Naval Recruiting Station, Cincinnati, O.

R. A. CAMBELLE, acting assistant surgeon. Detached from the Naval Recruiting Station, Cincinnati, O., and ordered to the Midway Islands.

I. S. K. REEVES, assistant surgeon. Ordered to the Naval Hospital, Boston, Mass.

A. H. ALLEN, assistant surgeon. Appointed assistant surgeon, with rank of lieutenant (junior grade), from May 2, 1906.

SOCIETY NOTICES.

THE NATIONAL CONFEDERATION OF STATE MEDICAL EXAMINING BOARDS.—The National Confederation of State Medical Examining Boards will hold its annual convention in Room 240, State House, Boston, on Monday, June 4, 1906. The opening session will begin at 2 o'clock P.M. Dr. Walter P. Bowers, of Clinton, in behalf of the Massachusetts Board of Registration in Medicine, will deliver an address of welcome. Members and ex-members of State Medical Examining Boards, and physicians and educators, who are interested in the cause of higher education, are cordially invited to attend.

AMERICAN SOCIETY FOR THE STUDY OF ALCOHOL, INEBRIETY AND OTHER NARCOTICS.—The thirty-sixth annual meeting of this society will be held in the parlors of the Hotel Vendome, Commonwealth Ave., Boston, Mass., June 5, 6 and 7, 1906. The sessions will be held from 9 A.M. to 10.30 A.M. each day.

T. D. CROTHERS, M.D., Secretary.

ANNUAL MEETING OF THE AMERICAN LARYNGOLOGICAL, RHINOLOGICAL AND OTOLOGICAL SOCIETY.—The twelfth annual meeting of the American Laryngological, Rhinological and Otolological Society will take place at Kansas City, Mo., June 11, 12, 13, 1906. The sessions will be held in the Midland Hotel, corner 7th and Walnut streets. The profession is cordially invited to attend.

WENDELL C. PHILLIPS, M.D., Secretary.

AMERICAN LARYNGOLOGICAL ASSOCIATION.—The twenty-eighth annual congress of the American Laryngological Association will be held at Niagara Falls, N. Y., May 31, June 1 and 2, 1906. The sessions will be held at the New Prospect House. The profession is cordially invited to attend.

JAMES E. NEWCOMB, M.D., Secretary.

RHODE ISLAND MEDICAL SOCIETY.—The Rhode Island Medical Society will hold its ninety-fifth annual meeting at eleven o'clock A.M., Thursday, May 31, 1906, in the Trocadero, 134 Mathewson Street, Providence, R. I.

STEPHEN A. WELCH, M.D., Secretary.

RECENT DEATHS.

JACOB LAFAYETTE WILLIAMS, M.D., M.M.S.S., died in Boston, May 15, 1906, aged eighty-two years.

CHARLES G. WILSON, who for eight years was president of the New York City Board of Health, died at his summer home near Goshen, N. Y., on May 18, at the age of sixty-two years. He was appointed head of the Health Department by Mayor Grant in May, 1889, and it was during his incumbency of the position that the famous "cholera scare" occurred.

BOOKS AND PAMPHLETS RECEIVED.

Columbia University Biological Series, VIII. The Dynamics of Living Matter. By Prof. Jacques Loeb. Illustrated. New York: The Columbia University Press, The Macmillan Company, Agents. London: Macmillan & Co., Ltd. 1906.

The Modern Materia Medica. The Source, Chemical and Physical Properties, Therapeutic Action, Dosage, Antidotes and Incompatibilities of all Additions to the Newer Materia Medica that are likely to be called for on Prescriptions. New York: The Druggists' Circular, 1906.

A New and Physiologic Explanation of a Common Physiologic Phenomenon. By F. Park Lewis, M.D. Reprint.

Transactions of the American Ophthalmological Society. Forty-first Annual Meeting, Boston, Mass., 1905. Vol. X, Part III.

Infection, Immunity and Serum Therapy. In Relation to the Infectious Diseases which attack Man; with Considerations of the allied Subjects of Agglutination, Precipitation, Hemolysis, etc. By H. Kicketts, M.D. Illustrated. Chicago: American Medical Association Press, 1906.

International Clinics. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, Neurology, Pediatrics, Obstetrics, Gynecology, Orthopedics, and Other Topics of Interest to Students and Practitioners. By leading members of the Medical Profession throughout the world. Edited by A. O. J. Kelly, A.M., M.D. Vol. I. Sixteenth Series, 1906. Philadelphia and London: J. B. Lippincott Co.

University of California Publications. Physiology. On the Counteraction of the Toxic Effect of Hypertonic Solutions upon the Fertilized and Unfertilized Eggs of the Sea-Urchin by Lack of Oxygen. By Jacques Loeb. Reprint.

Infant Feeding. The Feeding and Care of Infants. The Selection and Modification of Cows' Milk. By the Illinois State Board of Health, 1906.

Clinique Thérapeutique de la Faculté de Médecine. Hôpital. Beaujon. Leçon d'ouverture. Par M. Albert Robin. Reprint.

Sur le Traitement du Diabète. Action de l'arsenic et des Eaux Chlorurées Sodiques Arsenicales sur le Diabète. Par le Dr. H. Verdalle. Reprint.

A New Method for Indicating Food Values. By Irving Fisher. Reprint.

A Manual of Medical Treatment or Clinical Therapeutics. By I. Burney Yeo, M.D., F.R.C.P. Fourteenth edition. Vols. I and II. Chicago: W. T. Keener & Co. 1906.

Physiology of the Nervous System. By J. P. Morat. Authorized English Edition. Translated and edited by H. W. Syers, M.A., M.D. (Cantab.) Illustrated. Chicago: W. T. Keener & Co. 1906.

Twenty-ninth Annual Report of the Board of Health of the State of New Jersey, 1905, and Annual Report of the Bureau of Vital Statistics.

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Address.

MEDICAL STATISTICS AND THE SANITARY DEPARTMENT OF THE RUSSIAN FORCES IN THE FAR EAST.*

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The subject of my lecture is "Medical Statistics and the Sanitary Department of the Russian Forces in the Far East, 1905."

The morbidity and mortality bills which the Russian army was called upon to meet from Jan. ²⁸/_{Feb. 10}, 1904, to Sept. ¹/₁₄, 1905, exclusive of Port Arthur, totaled as follows:

The movement of sickness and wastage (from death and disability) among all grades of the (Russian) Manchurian field armies and services in rear of the same, due to wounds and diseases from Jan. ²⁸/_{Feb. 10}, 1904, to Sept. ¹/₁₄, 1905, was as follows:

TABLE I

| Wounded | Sick | | |
|---------|----------------|--|--|
| 3,393 | 7,445 Officers | | |
| 110,362 | 230,027 Men | Sent to hospital | |
| 51 | 14 Officers | From wounds and sickness | |
| 179 | 185 Men | | |
| | 22 Officers | From sudden death | |
| | 631 Men | | |
| 447 | 125 Officers | Died in hospital | |
| 2,861 | 6,065 Men | | |
| 8,237 | 16,018 Men | Discharged for disability | |
| 1,755 | 3,711 Officers | | |
| 57,937 | 111,142 Men | Returned to duty | |
| 1,161 | 2,585 Officers | | |
| 11,635 | 74,713 Men | Evacuated (transferred) | |
| 30 | 1,024 Officers | | |
| 378 | 22,661 Men | Remaining in hospital | |
| 214 | 825 Men | Remaining in convalescent institutions | |
| 3,447 | 7,481 Officers | | |
| 110,841 | 230,643 Men | Total accounted for | |

The foregoing table, which is official, presumably includes every case that appeared on the hospital registers of the armies for which the Medical Department became responsible, together with 1,185 cases of sudden death making a grand total of 352,412 cases. Of these:

8,983 died,
24,255 were discharged for disability,
120,391 were transferred to hospitals west of Lake Baikal,
173,645 recovered, and
25,135 remained under treatment.

352,412

I have no official writing as yet showing the mortality among the cases "transferred." This, with additional statistics, was promised to be sent me here, but I have a note of a personal conversation had with the statistical officer, Sept. 22, 1905, during which he told me that the total mortality from diseases was 18,830 to Sept. 1, 1905. Deducting the 5,142 deaths accounted for in the foregoing table from the number given by the statistical officer and there remain 13,388 deaths which must have occurred among those "transferred," a rate of 173 per thousand. As only serious cases were as a rule sent away from the army, this rate, though high, may be regarded as not excessive. This deduction is, of course, open to correction.

TABLE II

BATTLE LOSSES (RUSSIAN ARMY) DURING THE WAR BY MONTHS *

| Month 1904 | Killed | | Wounded and confused | | Died of wounds | | Missing | |
|---------------|--------|--------|----------------------|---------|----------------|-------|---------|--------|
| | Off | Men | Off | Men | Off | Men | Off | Men |
| February | | 1 | | 2 | | | | |
| March | 1 | 8 | 4 | 16 | | | | |
| April | 26 | 623 | 59 | 1,140 | 2 | 12 | 4 | 171 |
| May | 1 | 56 | 16 | 285 | 2 | 11 | 6 | 71 |
| June | 19 | 628 | 133 | 2,926 | 2 | 73 | 23 | 1,166 |
| July | 27 | 974 | 180 | 5,320 | 12 | 114 | 10 | 428 |
| August | 91 | 2,244 | 177 | 15,179 | 26 | 326 | 18 | 1,957 |
| September | 107 | 2,433 | 174 | 16,817 | 24 | 212 | 23 | 2,408 |
| October | 84 | 1,812 | 106 | 13,511 | 22 | 540 | 18 | 2,526 |
| November | 2 | 98 | 21 | 708 | 6 | 91 | 1 | 28 |
| December | 11 | 140 | 59 | 704 | 12 | 49 | | 63 |
| 1905 | | | | | | | | |
| January | 49 | 1,670 | 178 | 10,746 | 23 | 212 | 25 | 1,277 |
| February | 204 | 7,638 | 145 | 47,272 | 35 | 640 | 282 | 28,156 |
| March | 7 | 181 | 40 | 1,165 | 20 | 659 | | 225 |
| April | | 103 | 13 | 484 | 1 | 206 | 1 | 58 |
| May | 4 | 68 | 10 | 331 | | 88 | | 28 |
| June | 3 | 51 | 24 | 405 | 5 | 41 | | 40 |
| July | | | 11 | 287 | 3 | 10 | | |
| August | | | 19 | 150 | | 6 | | |
| Total | 667 | 18,830 | 1,770 | 117,707 | 201 | 1,340 | 421 | 39,308 |

* Exclusive of Port Arthur.

† Of these officers, 486 remained on duty.

‡ Of these men, 7,143 remained on duty.

The foregoing table accounts for 181,223 cases of which 19,167 were known to be killed and 3,511 died of wounds, making a grand total of

Killed 23,008
Wounded 121,186
Missing 39,729

The extraordinarily large proportion of missing is accounted for by the fact that the Russians, having been driven from every battle field, were forced to leave their dead to be buried by the Japanese, and as there were no means of identifying the Russian dead the Japanese could not bury them as "unknown" and the Russians carry them as "missing."

It is not to be presumed that any considerable number of the Russians deserted to the enemy, they could hardly expect a hospitable reception from the Chinese, and they could not get home, so it is safe to assume that practically all "missing"

* Lecture I, before the United States Army War College session of 1906.

Russians were buried on the battle field. As this fact is not susceptible of absolute proof, in making my estimate of "killed" I shall have to depend upon the statistics of other wars to reach a reasonable basis of calculation.

But before proceeding to a discussion of this question I will submit the following table of Russian losses by battles.

war" is 23,008, or, killed and missing, 62,737, of which we may assume from German experience that 37,642 were killed, making a total of

37,642 killed,
121,486 wounded, and
25,095 missing.
184,223

TABLE III.

| | | Killed. | | Wounded and contused. | | Missing. | | * Strength. |
|---|-------------------------------------|-----------|--------|-----------------------|---------|-----------|--------|-------------|
| | | Officers. | Men. | Officers. | Men. | Officers. | Men. | |
| Turencheng, | April 17, 18, 1904. | 26 | 561 | 38 | 1,081 | 6 | 679 | |
| Wafangkzu, | May 31, 1904 } June 1, 2, 1904 } | 18 | 459 | 85 | 2,155 | 10 | 754 | |
| Siao Kao-lin, | July 4, 6, 1904 . . . | 8 | 215 | 37 | 1,069 | 2 | 224 | |
| Tashiebiao, | July 10, 11, 1904 . . | 4 | 141 | 30 | 646 | 3 | 107 | |
| Yantseinski Pass, | July 18, 1904 . . . | 10 | 319 | 12 | 1,192 | 2 | 219 | |
| Liao Yang, | Aug. 11, 1904 . . . | 87 | 2,027 | 414 | 12,186 | 10 | 1,161 | 156,600 |
| Sha-ho, | Sept. 25, 1904 } Oct. 5, 1904 } | 190 | 4,894 | 861 | 29,531 | 35 | 5,838 | 168,200 |
| Sandepas, | Jan. 12, 16, 1904 . . | 49 | 1,870 | 378 | 10,746 | 25 | 1,277 | |
| Mukden, | Feb. 11, 1905 } March 1, 1905 } | 233 | 7,638 | 1,455 | 47,272 | 282 | 28,156 | 336,400 |
| Lesser battles and skirmishes | | 42 | 843 | 439 | 11,529 | 46 | 593 | |
| Total | | 667 | 18,800 | 3,779 | 117,707 | 421 | 39,308 | |

* The strength is given on the authority of General Kuropatkin.

Assuming that the proportionate losses at the battles of Liao Yang, Sha-ho and Mukden, are a fair index to the proportionate losses in other battles it is not difficult to deduce the real strength of the Russian army in every battle nor to arrive at a reasonable conclusion as to total proportionate losses. The total casualties (exclusive of prisoners) in the specified battles were 21.45% of the strength given by Kuropatkin.

Of this total:

10.5% were killed,
61.5% were wounded, and
25 % missing,

or 1 killed to 2.5 missing, to 6.5 wounded.

The statistics of the German army in the war of 1870 show a loss of but 4.12% of the total force engaged, of which 0.75 were killed, 2.83 wounded, and 0.54 missing, or, roughly, 1 missing to 1.5 killed to 5.66 wounded. If then we assume the German figures as proportionately applicable to the Russian army we must take from the "missing" and add to the "killed" enough to make the proportion of 1 to 1.5.

By reference to table No. I it will be seen that 3,541 cases of wounds died in hospital and quarters, and it is more than likely that a proportionate number of the 13,388 estimated mortality among "transferred" cases died from wounds—but of these I have no record—and will leave them out of consideration in this report. Add the 3,541 wounded cases to the 19,467 killed, and the total dead from the "legitimate results of

I find it difficult to believe, assuming all the Russian prisoners in the hands of the Japanese to have been identified and reported, which I understand is the case, that 25,095 "missing" Russians are still in the land of the living. Yet this seems to be the only acceptable basis on which to work and I will therefore adopt it.

By reference to table No. I and comments thereon it will be seen that up to Sept. 1-14, 1905, 18,830 soldiers had died from disease, which is almost exactly one to two dead from battle injuries. It may be safely assumed that this proportion will not vary by more than a small fraction when the final statistics are compiled, and it stands as the best sanitary record up to this war.¹

The Russian losses by arms of the service are found in Table IV.

The military population which furnished the following statistics has been variously estimated and generally overrated until after Mukden, since which battle it has probably been underestimated by all except the two most interested nations. I have no statistics as to the Russian strength before the date of my arrival in the far East, but I have the unofficial statement of General Kuropatkin which may be accepted as authoritative. He says (the reasons are not here necessary to enumerate) that "in spite of our [Russian]

¹ It may be of interest to compare these statistics with those of the Japanese army given in the *Review of Reviews*, November, 1905, p. 584: February, 1904, to May, 1905, 43,892 killed; 145,524 wounded; total, 189,416. Died in hospital from wounds, 9,057; from disease, 11,992; total deaths from wounds, 52,946; from disease, 11,992.

apparent superiority in number of battalions we were always numerically inferior to the enemy. Thus at Liao Yang we had altogether 135,000 bayonets, at Sha-ho 115,000 bayonets, and at Mukden between 275,000 and 290,000, the exact figure has not yet been determined; in spite of this we took the offensive from Mukden well

TABLE IV

| Arm | Killed | | Wounded and contused | | Missing | | Proportional strength of fighting effective Per cent * |
|----------------|--------|--------|----------------------|---------|---------|--------|---|
| | Off | Men | Off | Men | Off | Men | |
| Infantry | 602 | 17,874 | 3,246 | 111,899 | 379 | 37,789 | 84.4 |
| Cavalry | 20 | 366 | 159 | 2,060 | 20 | 395 | 53.0 |
| Artillery | 20 | 427 | 310 | 3,671 | 15 | 747 | 7.0 |
| Engineers | 1 | 34 | 42 | 282 | 2 | 126 | 3.0 |
| Frontier guard | 10 | 98 | 15 | 312 | 3 | 196 | 0.6 |
| Other services | 2 | 2 | 7 | 14 | 2 | 54 | — |
| Total | 667 | 18,801 | 3,779 | 117,707 | 421 | 49,308 | — |

* I am indebted to Major Macomb for the estimate of proportional strength. Other services embrace the non-combatant branches, the strength of which is 10% of the fighting effective.

knowing that the enemy was superior in number.† Add to the foregoing 16% to cover the other combatant forces present in these battles and we find that the Russians had at

| | |
|------------|---------|
| Liao Yang, | 156,600 |
| Sha-ho, | 168,200 |
| Mukden, | 346,100 |

Aug. 20, 1905, the chief medical inspector told me in conversation that the combatant strength east of Baikal was \$70,000.

Oct. 2, 1905, the statistical officer informed me that the total strength of the Russian forces east of the Lake on that date was

| | |
|---|-----------|
| In the field, | 729,000 |
| Elaps and rear, | 112,000 |
| Pre-Amur district, | 116,000 |
| En route from Russia, | 80,000 |
| | 1,037,000 |
| Add 10% for non-combatant services in the theater of war, | 95,700 |
| Grand total, | 1,132,700 |

From these statistics it would appear that during the year 1905, Russia sent to the Far East nearly 800,000 soldiers or an average of 100,000 per month, and at the time of the declaration of peace had assembled an army numbering more than eleven hundred thousand men, almost every one of whom had been transported over a single-track railway for more than five thousand miles.

Wounds were inflicted by different missiles in the following proportion (per cent):

| | Rifle | Shrapnel | Shell |
|-----------|-------|----------|-------|
| Officers, | 74 | 11 | 18 |
| Men, | 79 | 13 | 8 |

Wounds from cold steel are almost negligible in spite of all that has been said of night attacks and bayonet charges. It is estimated that in 1,000 cases of Russian wounded, 17% suffered from saber or bayonet wounds. Of this number

17% were inflicted by the saber and 82% by the bayonet. In other words in the total number wounded (113,755) about 2,000 were the victims of cold steel,—340 receiving saber and 1,660 bayonet wounds. I presume if the "dead" and "missing" had been examined this proportion would have been maintained. The extraordinarily large proportion of wounded by artillery fire is certainly impressive. No other war has shown 29% of all wounded officers and 21% of men placed *hors de combat* by this arm. Wolseley says (Soldier's Pocket Book, p. 121): "According to the German medical returns the number of all ranks in the German army killed and wounded by rifle bullets during the war of 1870 was 6,969 killed and 49,093 wounded, whilst by artillery fire the numbers were 695 killed and 4,389 wounded; that is, out of every 100 men (wounded) 91 were hit by infantry and 9 by artillery fire." The chief surgeon writing from Gungalin, Sept. 2, 1904, in concluding a report on the action of the Japanese jacketed bullet says: "But all this bears no comparison with the progress made in the artillery arm. On the 17th and 18th of August [Liao Yang] our [Russian] artillery fired more than 100,000 shells and the Japanese artillery by far exceeded this. The havoc wrought by the latter can only be recalled with a shiver. The wounds caused by artillery fire were terrible and usually fatal."

It is interesting to note that the Russians report but 3,008 dead, of the wounded treated in hospital, and 533 of those in quarters. This is exclusive of the dead from wounds of those transferred to Russia, which, if in the same proportion numbered approximately 1,120, or a total of 4,661, in 113,755 wounded. The reported "killed" numbered 19,467 and the "missing" 39,729, which may be counted as killed; we have then:

TABLE V

| | Killed | Per cent of killed | Wounded | Per cent of wounded | Dead in hospital and quarters of wounds | Per cent of total wounded |
|-----------|--------|--------------------|---------|---------------------|---|---------------------------|
| Russians, | 59,967 | 57.4 | 113,755 | 43.8 | 4,661 | 4 |
| Japanese, | 44,892 | 42.6 | 145,527 | 56.2 | 9,054 | 6 |

* This includes the missing but not the Prisoner of War statistics.

These figures are significant or would be if we knew all the facts and suggest the following questions:—Proportionately

Why were 12% more Japanese wounded than Russians?

Why were 14% more Russians killed than Japanese?

Why did one-third more wounded Japanese lie in hospitals than did wounded Russians?

Being glad that at the results of the military work of the Russian armies in the Far East, let us now consider the means by which these results were reached.

It might be well to state that during the period of my service in Manchuria the entire region

east of Lake Baikal was under the jurisdiction of General Linevich, commander-in-chief; that the troops there were distributed among four armies, indeed five, the first, second and third armies at the front, the rear army and the Pre-Amur District including the Fortress of Vladivostok. West of the lake the line of communication was given over to institutions of the rear and controlled from St. Petersburg, the sanitary department of this region being under command of Major-General Chlinowsky, general staff, stationed at Irkutsk.

Furthermore, it will be remembered that under the Chief of Staff of the army, and indeed of each army, were three departments. Those of the quartermaster general (the duties of which seem to have little correspondence with our quartermaster's department), the adjutant general, and the general of roads and communications, while directly under the commander of the army were the intendants (supplying food, clothing and forage), inspector of artillery, inspector of engineers, chief paymaster and controller (auditor).

Among the subsidiary departments were the sanitary, the judge advocate's, the chaplain's, etc., which according to regulations were under the adjutant general. Practical experience in the field, however, forced an independent organization for the sanitary department with a chief reporting directly to the commander-in-chief.

The Sanitary Department of the Russian Military Establishment has a *cadre* of military officers into which fit the various elements making up such an organization, the principal one of which is the Medical Department, others being the Red Cross, Evacuation, Veterinary Department, etc. The chief of this service in the Far East was General Ivanov, a lieutenant-general of artillery; he was a staff officer of the commander-in-chief and himself had a staff the officers of which represented the various above mentioned departments, the medical department being represented by Medical Inspector Dr. Gorbacevich, civil counsellor. Each of the armies had its own chief of the sanitary department (a staff officer of the army commander) who was a lieutenant-general or major-general, usually but not necessarily of the general staff, with assistants representing the various subdivisions of his department all of whom were more or less independent of each other. The subdivisions were administered in considerable part by combatant officers detailed from the several branches of the service, and the entire organization was conducted on strictly military lines by military officers. The physician's part in this organization was almost wholly within the limits of his own profession, and such administration as fell to him was correspondingly narrowed. To be sure a recent regulation gave the command of field hospitals to the senior physician, on duty therewith, and relegated the combatant officer, detached for duty with the hospital, to the subordinate control of the enlisted personnel, property, train, etc., but as a practical fact I saw not a few hospitals in which the officer commanded, for the surgeon

untrained in and without taste for administration was quite willing to relinquish authority to avoid responsibility, and devote himself strictly to professional and more congenial work.

The strength of the Sanitary Department in the theater of operations at the close of the war was approximately 75,000, of whom at a rough estimate 500 were combatant officers, in rank from lieutenant to lieutenant-general. The physicians numbered something over 3,000.

The units constituting this department of the Russian army in war cease to exist in time of peace as cohesive bodies and are resolved into their elements. The *cadre*, of course, is maintained. The combatant officers are assigned to command the hospitals in which some of the physicians who elect to remain in the service do the purely professional work. There is, to be sure, a medical inspector general, a physician, whose chancery is in St. Petersburg, and who is the custodian of the medical archives. He is the senior colleague, so to speak, of all physicians serving with the army, but outside of those in his office he has little control over them, he is also medical purveyor. Recently he was made a member of the staff of the Minister of War, and in the absence of the latter is authorized to decide questions relating to medical business. Such regiments as are with the colors have surgeons, and the various medical institutions are liberally provided with them, but those who serve in fixed hospitals are usually the medical attendants to the community in which they live.

Practically every physician in Russia belongs to the Reserve until he reaches the age of forty-five years, but, unlike his German *confrère* who must serve in the ranks for a year, no military service is required of him except in case of actual war. Should he desire duty with the forces in peace time he makes application to the Minister of War, whereupon, if his services are needed and his references satisfactory, he is forthwith appointed on probation, without examination, and if satisfactory he is given a permanent appointment and remains as long as it may please him to do so, and his government to keep him, of course within the limitations of age requirements.

This unusual condition of affairs, for Russia is now almost the only nation of any importance that has not a distinct military sanitary corps officered by medical officers with a fixed military status, must not lead to the inference that the physicians employed are not highly educated in their profession, or that Russia in any way falls short of other nations in the care of her soldiers, for this would be a mistake. One cannot reach the doctorate there without giving evidence of high professional attainment.

Russia is too experienced in military affairs to permit herself to be wholly dependent upon the voluntary service of her physicians for medical attendance to her soldiers in peace times, and for more than a hundred years has maintained a military medical academy from the graduates of which have come a considerable percentage of her

army and navy physicians. Any one desiring to study medicine, who has graduated at an approved intermediary school, may enter this institution by paying the regular fees and enter the army or navy after graduating, as can the graduate of any of the seven Russian universities. Most of the students of the Military Medical Academy are beneficiaries of the school, and after the second year receive a stipend from the government in return for which they are obliged to serve at the rate of eighteen months for each year in the Academy, as a beneficiary, a maximum of four and a half years, the whole course covers a period of five years.

One is astonished, upon visiting this institution, at the extent and perfection of its plant: A stately academic building with capacity for 750 students. A completely appointed hospital of 850 beds. A library containing over a hundred thousand volumes and receiving seven hundred current medical publications from the entire world. Anatomical, physiological and bacteriological laboratories occupying a great two-story building. A physico-chemical institution. A botanical garden. A laboratory of hygiene (established in 1865). In addition there is a school for *feldshers* (male nurses), quarters for commandant, who in this institution is a physician, parks, etc.,—all covering an area of one hundred acres in the heart of a great city, and representing an investment of probably much more than twenty million dollars. Surely, this is evidence enough that the Russian army physician must be thoroughly abreast of the latest advances in his profession, and he is.

What is the relation of the medical man to the military body? The physicians attached to the Russian army, many of whom pass their lives in the service, have no military rank; as one of them said to me, "There is a huge book defining our duties, but not a word as to our rights." He seems to occupy a position somewhere between the *chinornik* (civil official) and the officer, he is entitled to wear a uniform (as is almost everybody else in Russia), a sword, epaulets and a cockade on the band of his cap; he is also entitled to a salute, but, like our contract surgeon, he is neither "fish, flesh nor good red herring." Whether he is accepted or rejected socially by the officers depends entirely upon himself, but he is never recognized as one of them, though intellectually he is almost inevitably their superior.

I was told that shortly previous to the conflict in Manchuria, General Kuropatkin, then Minister of War, convened a commission to look into the question of reorganizing the Medical Department and placing it upon the status of like organizations in other armies. He recognized that the first step in this direction was a preliminary military training of the *personnel* and had about determined upon reserving a year's service in the ranks as precedent to appointment in the Medical Corps. He also realized that if the Medical Department was to administer its own affairs its officers would have to be trained in administration, and the regulations giving the

senior surgeon command of the field hospital was the first step in this direction. War came before reorganization was effected. Doubtless a good thing, as the experiences in the Far East will determine important points which before would have been tentative, and a better reorganization will result.

I wish it to be distinctly understood that nothing I have said is to be considered as criticism of my Russian colleague; his work speaks for him; it proves him the peer of the physicians of any nation and for it he deserves well of his country, and the commendation of the world.

What does he get? A physician enters the army in the tenth *Chin* grade, "Titular Counselor," assimilated to that of captain and receives 130 rubles monthly. After four years' service he is promoted to the next grade "College Assessor," assimilating that of major (which office no longer exists in the Russian army) and is paid approximately 160 rubles monthly. In this grade he serves two years, when he becomes a "Court Counselor" (lieutenant-colonel), with slightly increased pay. After three years' additional service he receives the grade of "College Counselor" (colonel with approximately 210 rubles monthly). The next grade, "Civil Counselor" (brigadier-general no longer an office in the Russian army), 250 rubles monthly, is reached after an indefinite period of service, and thereafter advancement is made by selection. There are table allowances, in addition to pay proper which about double the salary.

Dr. Gorbacevich, chief medical inspector of the armies, in the Far East has the grade of "Actual Civil Counselor," assimilating major-general, which is the fourth in the *Chin*; he has served thirty years, and Dr. Speranski, the chief medical inspector of the Russian army, is an "Actual Privy Counselor" of the third *Chin*, corresponding to the grade of lieutenant-general. Increased pay and allowances are given for service outside of Russia proper, and army physicians are allowed to accept other opportunities when such do not interfere with their regular duty. They may be transferred to duty with other branches of the public service.

There is compulsory retirement for age in the Russian army which applies to medical men also. Lieutenants must retire at fifty three years, captains at fifty five, majors at fifty eight, and those of higher grades with exceptions at sixty. Should the army physician have attained the office of medical inspector he continues on the active list after this age. The pension for twenty years' service is equal to half pay of the next higher grade and for thirty years' full pay. When retired for disability the amount of pension is determined by the disability. In addition to retired pay the officer as well as the army physician becomes the beneficiary of an official life insurance which is called "imperial pension." The fund for this pension accrues from a deduction of 6% from the annual pay of all officers, and reaches the beneficiary after he has served twenty five years. Should an officer die or

otherwise quit the service before completing this period, the amount actually paid in is wholly repaid him or in part his heirs, the widow getting half and the minor children one fourth.

Upon the completion of twenty-five years' service the officer becomes a beneficiary and receives an annuity for his life, one half of which is continued to widow and one fourth to minor children. I might add here that the enlisted men receive no pension unless absolutely unfitted for work. The Alexander Committee, founded and endowed by Alexander I, has for its object assistance to the needy military *personnel* including their widows and children. In addition to the endowment the funds of this committee are sustained by sequestering the increased amount of pay of the first three months after promotion of all officers, by concerts, private contributions, etc.

We have glanced at the man, let us now consider the machine as I saw it.

The *field* sanitary organization in all armies is essentially the offspring of war and has practically no existence in peace time. It must to the largest extent be organized at the moment of utilization, and like all new machinery is sure to work roughly and unsatisfactorily in the beginning. At the start it is almost always underengineered, for in the throes of war the most enlightened people seem to lose the capacity to multiply, and occasionally the intelligence to apply, their own experience. Then, too, the engine crew is almost entirely unaccustomed to the machine, and must learn it as it is being driven at top speed.

It would seem that Russian soldiers should be too well versed in the theory and practice of war to fail to anticipate the requirements of a military sanitary department in active service and to meet them in the way best suited to their own circumstances. When Russia's armies were mobilized there was probably no question as to the essential features of the sanitary department, all those had been provided for in regulations, and the *military* importance of the department recognized by placing it under the direction of high ranking military officers.

Nevertheless the Russian authorities in this mobilization did not provide a sufficient *military* hospital accommodation at the front, and must have counted largely on the Red Cross for their armies in the Far East, the military hospitals, as will be seen, having beds for but 8 + $\frac{1}{2}$ % of the fighting effective, whereas from front to base at least twice this number is necessary. I know not why this happened unless it was a question of transportation, and very likely such was the case, as Kuropatkin mentioned that one of the large demands made upon the railroad was for the transportation of the Red Cross institutions, which I am inclined to believe was not taken into consideration in early estimates, but was forced by inadequate *military* hospital accommodation, which latter alone was available for some time after the opening of hostilities. As will be shown later, the Red Cross duplicated the Medical

Department units to the extent of nearly 25%, furnishing hospital beds to the number of approximately 30,000.

Even with the Red Cross reinforcement the hospital accommodation would have been barely sufficient had the war continued on the same scale. We know that the percentage of casualties in at least three of the greatest battles was 21.45, and we know that when peace was declared the Russians had 729,000 men on the fighting line. On this basis the wounded of the impending battle would have been over 100,000, to accommodate which there were scarcely 120,000 beds east of Russia and nearly a fourth of these had been furnished by the Red Cross. At best, not over 100,000 beds would have been actually available, as the others were occupied by the current sick, so that a considerable number of sick and wounded might have been forced into improvised shelter, though not for very long. Without the Red Cross there would have been a breakdown in the Sanitary Department.

The scheme of field organization followed the lines which experience has taught to be the most practicable and which I will now endeavor to describe. It was essentially the same as that of the Japanese which is modeled on the German system.

The sanitary organization directly attached to active units has a continuing existence and is practically the same in peace and war. The regulation allowance of *personnel, matériel* and transport therefor is given in Table VI.

As a matter of fact, there were considerable departures in the Far East from the allowances above mentioned, as was to be expected.

The troop dispensaries or "lazarets," as the Russians call them, are in campaign opened only under exceptional circumstances for the care of hospital cases, such being sent to the field hospitals at once, or as soon as possible, so that all of the sanitary resources of the combatant units may be free and ready to accompany the commands to which they belong. A regimental hospital for the treatment of protracted cases is an anomaly in the field; if it is to accompany its unit it cannot entertain such cases, and if it does not accompany it, then it ceases to be a regimental hospital. On the battle field in the East the Russian regimental sanitary *personnel*, 4% of the combatant force, organized advanced dressing stations (regimental, etc., aid stations) to which the wounded were brought by the company bearers and where they received such treatment as they required or the circumstances permitted.

Every Russian soldier carried a first-aid packet. The officers usually attached it to the scabbard of the sword, as did the man who carried such a weapon. Other soldiers were supposed to have a special pocket in the breeches for the first-aid packet, though as a matter of fact this rule was more honored in the breach than the observance, but a place was always found for it somewhere. I heard nothing but praise for the first-aid packet, and the Russians had a very good one, differing

from ours in that it was without a triangular bandage. Moreover, the soldier used it legitimately and thereby received both positive and negative benefit.— positive because it provided an appropriate dressing and negative because it

TABLE VI

| Lazarets with Troops. | Infantry Regiment | Battalion Artillery Pack Brigade | Cavalry or Cossack Regiment | Artillery Brigade | Horse Battery |
|---|-------------------|----------------------------------|-----------------------------|-------------------|---------------|
| <i>Personnel.</i> | | | | | |
| Surgeons | 1 | 1 | 1 | 1 | 1 |
| Assistant surgeons | 1 | 1 | 1 | 1 | 1 |
| Feldshers, senior | 1 | 1 | 1 | 2 | 1 |
| Feldshers, apothecary | 1 | 1 | 1 | 1 | 1 |
| Feldshers, junior | 12 | 1 | 7 | 8 | 1 |
| Feldshers, students | 14 | 1 | 6 | 4 | 1 |
| Feldshers, company | — | 1 | — | — | — |
| Hospital sergeants | 1 | 1 | 1 | 1 | — |
| Orderlies | 3 | 2 | 2 | 4 | 1 |
| <i>Material.</i> | | | | | |
| Number of beds | 16 | 1 | 6 | 6 | 1 |
| Litters | 32 | 8 | — | 12 | 2 |
| Bearers (company) | 128 | 32 | 24 | 36 | 6 |
| Ambulance wagon for 5 patients, 4 lying and 1 sitting | 1 | 1 | 2 | 3 | 1 |
| Knapsacks, feldshers', in each 10 dressings | 16 | 1 | — | 6 | — |
| Medical chests, in each 50 dressings | — | — | 6 | — | 1 |
| Medical knapsacks, in each 20 dressings | 22 | 8 | — | 12 | — |
| Medical supplies in sanitary cart | — | — | — | — | — |
| <i>Hospital Comforts.</i> | | | | | |
| Conserves, { Soup | 20 | 20 | 30 | 30 | — |
| { Meat | 20 | 20 | 30 | 30 | — |
| Fruit extract, pounds | 2 | 1 | 1 | 1 | — |
| Sugar, pounds | 24 | 6 | 10 | 10 | — |
| Tea, pounds | 1 | 1 | 2 | 2 | — |
| Wine, bottles | 8 | 2 | 2 | 2 | — |
| Vodka, kegs | 1 | 1 | 6 | 6 | — |
| <i>Transport.</i> | | | | | |
| Wagons, 2-horse | 1 | — | — | — | — |
| Ambulances, 1-horse | 1 | 1 | — | 3 | — |
| Carts, hospital, 1-horse | 1 | 2 | 3 | 3 | 2 |
| Carts, veterinary | — | — | 1 | — | — |

prevented the use of an inappropriate dressing, which would surely have happened if a proper dressing had not been available.

The vehicles pertaining to the regimental lazaret were placed conveniently near at hand, under such shelter as might be available and were employed in carrying the wounded back to the main dressing station, formed by the division lazaret.

As previously stated, in all armies the organizations in rear of the firing line which pertain to the Sanitary Department, for the most part come into existence only when the army is mobilized—some as a development from existing elements and some *de novo*. The Russian Military Medical Department in the recent war mobilized the following medical units *per division*:

One Division Lazaret (dressing station and ambulance company).

Eight Field hospitals. (Each for 210 patients.)

The Division Lazaret was the central feature of battle-field sanitation; it was the initial point where began the great scheme of evacuation of the wounded, which involved an intricate organization and exact execution. The regulation *personnel* and equipment of the division lazaret is set forth in the following table:

TABLE VII.
PERSONNEL.

| | Dressing Station | Bearers, Ambulance Co. | Transport. |
|-------------|------------------|------------------------|------------|
| Officers | — | 2 | — |
| Surgeons | 5 | — | 2 |
| Feldshers | 5 | — | — |
| Clerks | 2 | — | — |
| Non-coms | — | 17 | 2 |
| Sanitarians | 22 | 200 | 37 |
| Total | 34 | 219 | 41 |

TRANSPORT.

| | |
|----------------------|----|
| Carts, 1-horse, | 3 |
| Wagons, 2-horse, | 15 |
| Ambulances, 1-horse, | 9 |
| Horses for mounts, | 1 |
| Horses, spare, | 5 |
| 27 vehicles | |

The 14th Division Lazaret, actually had 322 personnel, 68 carts, 147 litters, 2 field kitchens, and 4 three-hospital tents.

I found considerable variation in the lazarets of different divisions, both in *personnel*, transport and *material*, and I also found a like variety in the views of the surgeons on duty with this organization as to the exact functions of the lazaret and how its work was to be done. It is but fair to say that no doubt of this existed in the minds of those who had been at the front for some time and had opportunity to see a lazaret at work on the battle field, but those who reached the theater of war after Mukden had not this chance.

The Division Lazaret was the medical headquarters of the division, where the Division Surgeon was to be found and from which he supervised the work of his department. The lazaret established a principal dressing station to which theoretically all the wounded of the division were brought, given such professional treatment as might be absolutely necessary, were fed and finally transferred back to the division field hospitals by the transport column or, as we style it, Ambulance Company.

As nothing but outpost affairs occurred while I was in the Far East I saw no battle field work but heard many stories as to the way it was done.

The Russians had at the beginning no recourse but the Fabian policy of fighting and falling back until time was given them to a smolder their forces and create an army. The fighting always occurred along the line of the railroad and this road was the peculiar feature of the war, without it war could not have been carried on, and yet had it not existed there would have been no occasion

for this war. I have been told that the dressing stations were usually established at some Chinese house or shrine, oftentimes little sheltered from fire and that not infrequently the wounded were sent from them directly to the hospital trains upon which they were loaded and carried far to the rear. Others were taken to the division field hospitals, or to the Red Cross field hospitals, and thence to the hospital trains. The Russians managed to get most of their wounded away, and though some field hospitals remained on the ground, under the Geneva Convention, after the army retreated, the numbers of wounded left behind were comparatively small.

One physician relating his experience at a dressing station during the battles of Sha-ho said: "The dressing station was formed at a convenient point and was somewhat sheltered from fire, though an occasional shell would fall near by, and the location was too exposed to permit the wheeled transportation to approach. The *personnel* consisted of 3 physicians, 3 sisters and 15 'sanitarists' [soldiers]. An attempt was made to organize the station systematically, and conduct it as prescribed in regulations. At first but few wounded presented and the required records were kept, but soon the battle became fiercer, the maimed came in by scores and hundreds, and there was hardly time to render professional aid, leaving wholly out of consideration the keeping of records, so the wounded were bandaged as rapidly as possible and passed to the rear. There was much confusion and disorder, and presently the 'sanitarists' shirked, being worked out, but the surgeons and sisters worked on for twenty-four continuous hours until upwards of two thousand cases had passed through their hands. Such as required it were transferred to the hospital trains." The management of a dressing station, I take it, is no small job. The working of such organizations has been carefully provided for in regulations, reported upon in actual service, and graphically described in romantic literature, but must be seen to be fully appreciated.

The collecting of the wounded, the rendering to them of first aid and their transportation to the dressing stations, was the specific duty of the company and division bearers and no other was authorized to leave the ranks for this purpose. I am told that this regulation was not strictly enforced, that often the wounded were accompanied by other than company bearers, and in numbers in excess of the necessities of the cases. I presume this has been so in every war, and will continue to be, yet it is my conviction that specifically designated and marked company bearers should be part of the war organization of every unit, not only for the efficiency of the work but as a deterrent against one cause of unauthorized absenteeism from the firing line. No company bearer was permitted to go behind the regimental aid station, and his work of collecting the wounded was done under the supervision of a regimental line officer. The transport column, or ambulance company, was responsible for the

transfer of the wounded from the regimental aid stations to the dressing station, for which purpose the regimental medical transport might also be used; it had a liberal *personnel* and transport. The variety of vehicles issued to it were from one cause or another gradually reduced to the simplest form, the *deukolka* or cart, of which there were altogether 64, in the 17th Division 19th Corps, for example, each capable of carrying two patients most uncomfortably. Further details regarding sick transport will not here be considered.

I have stated that the Russians organized eight field hospitals *per* division, each capable of accommodating 10 officers and 200 men, — altogether 8+%. Of these four were mobile and four fixed. Of the four mobile hospitals two were assigned to each division under the Division Commander and two were held in reserve, remaining under the control of the Chief of the Sanitary Service, but in immediate touch with the troops, and always ready to supplement or substitute the divisional hospitals.

The *personnel* and transport of a field hospital were as follows :

| | | | |
|------------------------|----|-----------------------|-----|
| Officer, | 1 | Sisters (nurses), | 4 |
| Surgeons, | 4 | Inspectors, N. C. O., | 6 |
| Pharmacist, | 1 | Bookkeeper, | 1 |
| Priest, | 1 | Clerks, | 3 |
| Reader, | 1 | Ward orderlies, | 25 |
| Feldshers, | 10 | Servants, | 34 |
| Supt'd N. C. O., | 1 | Drivers, | 28 |
| Supt'd Asst. N. C. O., | 1 | | |
| Total, | | | 121 |
| Carts, 1-horse, | 4 | | |
| Wagons, 2-horse, | 19 | | |
| Ambulances, 4-horse, | 2 | | |
| Horses, riding, | 4 | | |
| Horses, spare, | 3 | | |

Sept. 3, 1905, Dr. Gorbacevich told me that he had 280 military hospitals east of the lake, exclusive of divisional hospitals.

On that day there were on the morning report : Surgeons, 2,598; pharmacists, 206, and an average of 6 sisters and 115 under *personnel* in each hospital; total, 38,964.

On the march at least one division field hospital invariably accompanied the troops. Both hospitals marched with the medical section of the divisional transport and were opened for the reception of the ill and injured from the main dressing station in battle, or from the regimental lazarets at other times. The divisional hospitals were required to be evacuated at the first opportunity, and never immobilized for any length of time. They could be emptied into the mobile hospitals immediately at hand, or their sick transferred to the fixed hospitals further to the rear. The fixed or "reserve" hospitals, as they were called, were established on the *clape* or at the advanced base in more or less permanent structures. They had the same *personnel* as the mobile hospitals, like them were designated by a number and at any time might be furnished with transport and become mobile field hospitals. In practice they were often combined, thus making a 420 or 630 bed hospital.

In fortresses, hospital accommodation was pro-

vided for 124% of the garrison. If this was insufficient the regulations authorized the organization of fortress temporary hospitals for 20 officers and 400 men.

Convalescent camps for 50 to 200 men were provided for convalescents, weaklings, slightly wounded, and those not requiring regular hospital treatment, and might be connected with a non-divisional or fixed hospital, or be established separately.

Sanitary convoys, railroad and boat ambulances, field dispensaries, and supply depots were liberally provided.

In addition to the medical units above enumerated there were at the disposition of the commander of the army: (1) All permanent hospitals, military and civil, in the region occupied by the army. (2) Foreign and newly opened hospitals in allied and neutral countries in accordance with special conventions. (3) Hospitals belonging to the enemy taken according to the rules of war, and (4) Medical institutions of the Red Cross societies.

I was informed that there were 93,000 beds in hospitals east of Lake Baikal, and 23,000 in the Irkutsk division, while in Russia proper there was practically no limit to the hospital accommodations. Of the 120,000 invalids who passed through Irkutsk I estimate that 100,000 went to Russia and were cared for there; of these about one third returned to the front.

The lessons to be deduced from the experience of the Russian Military Sanitary Department in the Far East, which I have briefly recounted, are too obvious to require recapitulation before so distinguished an audience. Suffice it to say that the sanitary standards of and the unequalled results obtained by Russia in her war with Japan should make it impossible for any nation to accept from her armed forces lower standards or results.

If such are demanded, and they certainly will be, they can only follow from an adequate, well organized, thoroughly equipped and intelligently administered Sanitary Department.

Original Articles.

METHOD OF INSTRUCTION IN THE HARVARD MEDICAL SCHOOL.*

BY FREDERICK C. SHATTUCK, M.D.,
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INTRODUCTION.

DURING the past thirteen years three important changes have been made in the method of instruction at the Harvard Medical School.

1. In the year 1892-93, the fourth-year course became compulsory.

2. In 1899-1900 a new arrangement of subjects taught in the first two years was adopted. The first half of the first year was devoted to anatomy, histology and embryology. The second

half to physiology, physiological and pathological chemistry.

The first half of the second year to pathology and bacteriology, the second half to a variety of subjects preparatory to the clinical work of the third and fourth years. (Hygiene, materia medica and therapeutics, theory and practice, clinical medicine, surgery.)

3. With the class entering 1902 began the third great change, namely, the fourth year became entirely elective, a minimum of one thousand hours being required.

This change was thought to be warranted by the raising of the average grade of students, due to the requirement of a bachelor's degree, or its equivalent, for entrance into the school.

ADMISSION OF STUDENTS. 1901-5.

"Candidates for admission to this school must present a degree in arts, literature, philosophy or science from a recognized college or scientific school, with the exception of such persons of suitable age and attainments as may be admitted by a special vote of the administrative board in each case."

We shall endeavor now to follow a student admitted to the Harvard Medical School through his four years of medical instruction. It will, of course, be impossible to go into a detailed description of each and every course offered, but the main points will be emphasized and especial attention paid to the courses in medicine and surgery.

DIVISION OF STUDIES.

First Year.

| | | |
|---|------------|-------|
| Anatomy,* | 3 | |
| Histology and Embryology,* | 3 | |
| Physiology, | 3 | |
| Physiological and Pathological Chemistry, | 3 | |
| 1st Year, 1st Half: | No. Hours: | |
| Anatomy, | 110 | |
| Histology and Embryology, | 241 | 684 |
| 1st Year, 2d Half: | No. Hours: | |
| Physiology, | 316 | |
| Physiological and Pathological Chemistry, | 280 | 626 |
| Total hours, | | 1,310 |

* Examination at end of first half year.

In the first half of the first year his entire time is devoted to anatomy, histology and embryology. In anatomy he has 80 hours of lectures, 180 hours of demonstration and 180 hours of practical anatomy with recitations — a total of 440 hours.

In histology and embryology the number of hours devoted to lectures is 36, those devoted to laboratory work 208, a total of 244 hours. The total number of hours for the first half year being 684, of this number 116 being lectures, section work, recitations and laboratory work having 568. Having devoted his whole time during October, November, December and January to these subjects, anatomy, histology and embryology, he takes a 3-hour examination in

* The exception above referred to applies only to those who, without such a degree, have acquired an equivalent education and training sufficient to enable them to profit by the instruction offered in the school.

* Read at the meeting of the Harvard Medical Society of New York, Feb. 24, 1906.

each subject and enters upon the second half of his first year.

Here again he devotes his whole time to two subjects: physiology, physiological and pathological chemistry.

In physiology the method of instruction is more varied. He has 43 hours of lectures, 174 hours of laboratory experiments, 40 hours of written tests on selected subjects, 26 hours of conference, 15 hours of special demonstration, 15 hours of recitation and 33 hours of discussion of theses, each student being compelled to write one. The total number of hours he devotes to physiology is 346; of this number 43 hours are given up to lectures, the rest to experiments, conferences, demonstrations, recitations, written tests and discussion of theses.

The number of hours of physiological and pathological chemistry which rounds out his first year is 280. Of this number, lectures and demonstrations occupy 64, while laboratory exercises take 216. At the end of his first year he has a 3-hour examination in each of the two subjects, and after a total of 1,310 hours with four 3-hour examinations he has completed his first year and is ready for his second year.

DIVISION OF STUDIES.
Second Year.

| | | |
|----------------------------------|------------|-------|
| Bacteriology,* | 1 | |
| Pathology,* | 3 | |
| Hygiene, | 1 | |
| Materia Medica and Therapeutics, | | |
| Theory and Practice, | | |
| Clinical Medicine, | | |
| Surgery, | | |
| 2d Year, 1st Half: | No. Hours. | |
| Pathology, | 477 | |
| Bacteriology, | 160 | 637 |
| 2d Year, 2d Half: | No. Hours. | |
| Hygiene, | 48 | |
| Surgery, | 234 | |
| Theory and Practice, | (128)† | 112 |
| Clinical Medicine, | (128)† | 112 |
| Materia Medica and Therapeutics, | 48 | 554 |
| Total hours, | — | 1,191 |

*Examination at end of first half year.

†The larger figures are more correct, most of these exercises lasting an hour and a half.

SECOND YEAR, FIRST HALF.

Entering upon his second year at the Harvard Medical School, our student again concentrates his attention upon two subjects during the first half year,—pathology and bacteriology.

The course in pathology, including neuropathology, surgical-pathology and comparative pathology has a total of 477 hours. These hours are divided into lectures, conferences, demonstrations and laboratory work. Ninety-six of his hours he spends in attending lectures or conferences, while 381 are given up to demonstration sections and laboratory work. He has ample opportunity to see and record autopsies, to examine gross pathological specimens, to study microscopical sections of these and other pathological conditions; lantern slides of the various pathological conditions are also shown daily.

He is taught bacteriology by lectures and practical laboratory work. Out of a total of 160 hours, 40 hours or $\frac{1}{4}$ of his time will be spent in attending lectures, while 120 hours, or the remaining $\frac{3}{4}$, are given up to practical bacteriology.

Having devoted a year and a half of his four, year course to anatomy, histology and embryology, physiology, pathological and physiological chemistry, pathology and bacteriology with a total of 1,947 hours, our student enters the second half of his second year. He now begins to branch out, the concentration which has marked his course thus far becomes less apparent (see Chart) and his time for the next half year will be spent in the study of hygiene, materia medica and therapeutics, theory and practice, clinical medicine and surgery. From now on until the end of his third year he becomes a member of a small section of six or eight men, and his time from 11 to 1 is given up daily to his section work in theory and practice, clinical medicine and surgery.

His time is spent at the various hospitals; he is taught bandaging, to examine blood, sputum, feces and stomach contents, to take clinical histories; all of these examinations controlled by some member of the various departments. He also now begins his physical diagnosis; he has in this section work from 11 to 1 during this half year 88 to 120 hours, instruction.

Surgery, 12 exercises 2 hours each. Clinical medicine, 32 exercises of 2 hours each, and the same in theory and practice.

His course in hygiene, consisting of lectures and demonstrations, comprises 48 hours.

In materia medica and therapeutics he also has 48 hours, the course being resumed in his third year.

In theory and practice he attends lectures on selected subjects by Dr. Fitz. 32 in number during the term, while additional clinical lectures in this department to the number of 48 are given.

In clinical medicine he attends 5 clinics weekly, at the Massachusetts General Hospital and City Hospital, a total of 80 hours; these added to his 48 clinics in theory and practice give him 128 hours of clinical lectures during this half year. Especial care is taken at these clinical lectures, his first ones, that type cases should be shown, He is taught to see, to feel and deduce; his observations and his method of palpation are constantly checked by one or more assistants.

In surgery, in addition to his section work of 24 hours, he has 134 hours of systematic lectures, demonstrations and recitations, with 76 clinical demonstrations illustrating the above.

The total number of hours in the second half of his second year is 554 which, with his 637 hours of his first half year gives him a total for the year of 1,191. The only examination which he takes at the end of this second half year is a 1-hour examination in hygiene, as he continues his study of materia medica, theory and practice, clinical medicine and surgery in his third year.

Much has been claimed for this method of

concentration of work during his first two years. It greatly increases the amount of time which can be devoted to each subject, while monotony is avoided by sufficient variety in the correlated groups. That it is the best method of instruction for many students cannot be denied; that it is a good method for all students is open to doubt. Some students can absorb knowledge by bolting, in others more or less slow mastication is necessary.

DIVISION OF STUDIES.

Third Year.

| | |
|--|---|
| Materia Medica and Therapeutics,* | 2 |
| Theory and Practice,* | 3 |
| Clinical Medicine, | 3 |
| Pediatrics, | 2 |
| Surgery (written 2 hr., practical 1 hr.),* | 3 |
| Clinical Surgery (written 1 hr., practical 1 hr.), | 2 |
| Obstetrics, | 3 |
| Gynecology, | 1 |
| Dermatology, | 1 |
| Syphilis, | 1 |
| Neurology, | 1 |
| Psychiatry, | 1 |
| Ophthalmology,* | 1 |
| Otology, | 1 |
| Laryngology, | 1 |
| Genito-Urinary Surgery. | |
| Legal Medicine. | |
| Municipal Sanitation. | |

| | |
|----------------------------------|---------------|
| 3d Year, | No. of Hours, |
| Theory and Practice, | 112 |
| Clinical Medicine, | 176 |
| Materia Medica and Therapeutics, | 16 |
| Neurology, | 48 |
| Surgery { Orthopedics, | 174 |
| { G. U. Surgery, | |
| { Clinical, Surgery, | |
| Obstetrics, | 128 |
| Ophthalmology, | 30 |
| Syphilis, | 28 |
| Dermatology, | 48 |
| Pediatrics, | 102 |
| Otology, | 24-26 |
| Gynecology, | 38 |
| Laryngology, | 28 |
| Psychiatry, | 16 |
| Legal Medicine, | |
| Municipal Sanitation (Optional), | - |
| Total Hours, | 970 |

Plus 1 month as surgical dresser and 7 to 10 days obstetrics.

*Examination at end of first half year.

THIRD YEAR.

Our student having now finished the so-called concentrated portion of his work enters his third year in medicine. He continues his work in materia medica and therapeutics, theory and practice, clinical medicine and surgery, which he began the last half of his second year, and in addition begins the study of pediatrics, genito-urinary surgery, orthopedic surgery, obstetrics, and the various so-called specialties. He has during this year 15 subjects; at the end of the first half of the year he takes examinations in theory and practice, materia medica and therapeutics, surgery and ophthalmology, a total of 9 hours in examinations.

His hours up to 11 are daily spent at clinics in medicine, pediatrics, surgery, neurology, dermatology, theory and practice, at the various

hospitals. His hours from 11 to 1 are devoted to section teaching throughout the year. His afternoons are spent attending lectures or recitations at the medical school, in obstetrics, theory and practice, surgery, pediatrics and the various specialties. In other words he attends clinics two hours daily from 9 to 11, section work from 11 to 1 and lectures at the school from 3 to 6 daily.

During this year our student is compelled to deliver 6 obstetric cases, spending from 7 to 10 days at either the Boston Lying-in Hospital or the Bennet Street Branch, with the necessary daily visits following the confinements; he has to work for 30 days as clinical surgical dresser in one of the various hospitals assigned to him. He has 16 hours of materia medica, 112 hours of theory and practice, 176 hours of clinical medicine including section teaching, 102 hours of pediatrics including section work, 174 hours of surgery including genito-urinary and orthopedic, with 30 days' additional work as surgical dresser in some out-patient department, 128 hours of obstetrics plus the time required to deliver 6 obstetric cases and care for them afterward, 38 hours in gynecology, 48 in dermatology, 28 in syphilis, 48 in neurology, 16 in psychiatry, 30 in ophthalmology, 24 to 26 in otology, 28 in laryngology (his section work in the various specialties averaging from 8 to 10 hours in each), 16 in municipal sanitation. Six hours in legal medicine are also offered.

At the end of his third year, having had 970 hours, plus 30 days surgical dresser work, plus 7 to 10 days for obstetric work, he takes 11 examinations with a total of 17 hours, or, plus the 9 hours at the end of his first half of the third year,—a total of 26 hours of examination. A glance at the section schedules for the months of October and March will show how large a part this work in small classes plays in the education of our student in his third year. (See section schedules.)

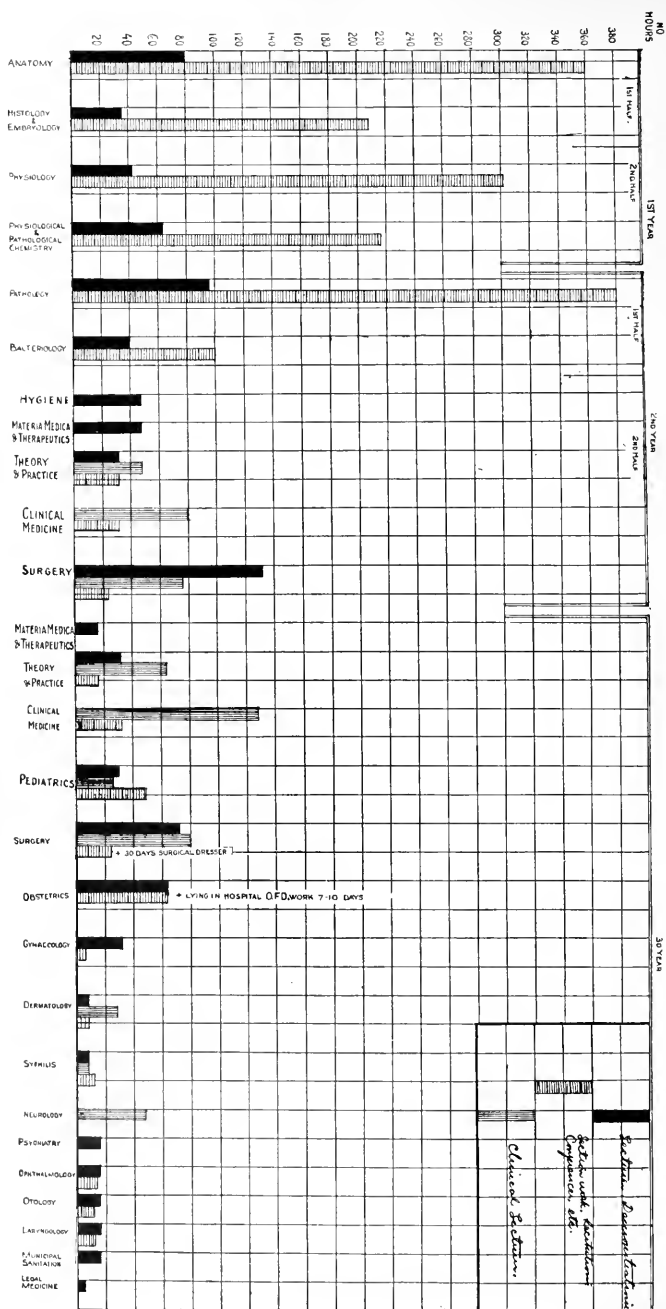
DIVISION OF STUDIES.

Fourth-Year Electives

| | |
|--|--------------------------|
| Anatomy | Surgery |
| Histology and Embryology | Genito-Urinary Surgery |
| Physiology | Orthopedics |
| Physiological and Pathological Chemistry | Surgical Pathology |
| Bacteriology | Obstetrics |
| Pathology | Gynecology |
| Neuropathology | Dermatology and Syphilis |
| Hygiene | Neurology and Psychiatry |
| Clinical Medicine | Ophthalmology |
| Theory and Practice | Otology |
| Pediatrics | Laryngology |
| Clinical Surgical Pathology | |

FOURTH YEAR

Our student, entering upon his fourth year, can in a measure elect what he will study. He must have a minimum of 1,000 hours. The general plan of instruction of the fourth year is as follows: Courses are offered by the various departments as half courses. A half course occupies the entire day for one month (the all-day plan, or



the forenoons or afternoons for two months (the half-day plan). Each half course has a value of 125 hours. Eight half courses are necessary to satisfy the requirements of 1,000 hours demanded in the fourth year. The two half courses elected for the first two or last two months must be formed on the same plan to avoid conflict.

63, or surgery as did 61; pediatrics was elected by 58, and theory and practice by 46

Let us suppose that the student, now in his fourth year, whom we have been following, chooses to become a general practitioner, or at least decides not to specialize thus early, he could select a course similar to a course we will call A. If on the other hand, he should

| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|--|--|--|--|
| MARCH | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 26 | 27 | 28 | 1 | 2 | 3 | 5 | 6 | 7 | 8 | 9 | 10 | 12 | 13 | 14 | 15 | 16 | 17 | 19 | 20 | 21 | 22 | 23 | 24 | | | | |
| 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | | | | | | | | | | |
| 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | | | | | |
| 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | | | | | | | | | |
| 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | | | | | | | | | | |
| 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | | | | | |
| 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | | | | | | | | | |
| 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | | | | | | | | | | |
| 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | | | | | |
| 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | | | | | | | | | |
| 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | | | | | | | | | | |
| 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | | | | | |
| 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | | | | | | | | | |
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intelligently, and doing so will mark him on a scale of 60 for the examination. He also marks him on a scale of 20 as regards his opinion of the general work of the student, a total of 80%. The thesis also required is marked on a scale of 20%, thus the total mark of 100%. Thus it will be seen that most of the marking is done by assistants.

Adams Syndrome, etc. In addition, once a week he attends a clinical pathological demonstration at the Massachusetts General Hospital, at which time all of the organs removed at autopsies for the week are demonstrated; before the pathological condition is revealed, however, the clinical history of each case is taken up, a probable

COURSE A, SUITABLE FOR GENERAL PRACTITIONER. 1,000 HOURS.

| | Oct. | Nov. | Dec. | Jan. | Feb. | March. | April. | May. | |
|-------------|-----------|-----------|-----------|-------------|---------|-------------|--------------|------|---|
| A.M. 9-1 | Medicine. | Medicine. | Medicine. | Pediatrics. | Surgey. | Obstetrics. | Dermatology | | or Gynecology, Neurology and Psychiatry. |
| P.M. 2-6 | | | | | | | Bacteriology | | or various laboratory courses. |

COURSE B, SUITABLE FOR SURGEON. 1,000 HOURS.

| | Oct. | Nov. | Dec. | Jan. | Feb. | March. | April. | May. | |
|-------------|-----------|-----------|---------|---------|---------------|--------|-------------|------|------------------------------------|
| A.M. 9-1 | Medicine. | Medicine. | Surgey. | Surgey. | G. U. Surgery | | Gynecology | | or Clinical Surgical Pathology. |
| P.M. 2-6 | | | | | Anatomy | | Orthopedics | | or Surgical Pathology. |

In addition to his out-patient work his course in medicine also includes conferences on out-patient records, where a criticism of the records is made, with discussion upon the differential diagnosis, prognosis and treatment, with reports by students asked to look up doubtful points brought out in the discussion.

He has opportunity under the direction of an assistant to control his examinations in blood, sputum, feces, gastric contents, during this work in medicine, by laboratory exercises.

Thesis work: Our student writes a thesis, taking as a subject, assigned by one of the assistants, either some particular case or group of cases seen by him during his work; sometimes ward cases are given out for subjects; he consults weekly with the assistant, who advises him about looking up the literature of the case, the current as well as the textbook, who looks over, corrects the finished thesis and selects the best ones to be read at weekly meetings of the section in the presence of Dr. Shattuck and assistants. Subjects of present interest are often selected, like the X-Ray Treatment of Leukemia, Our Present Knowledge of Etiology of the Stokes-

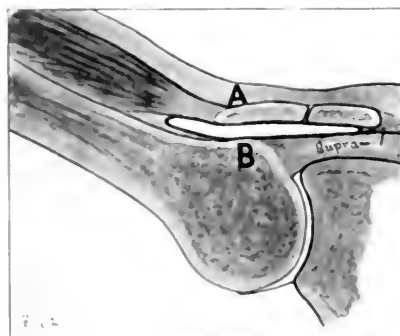
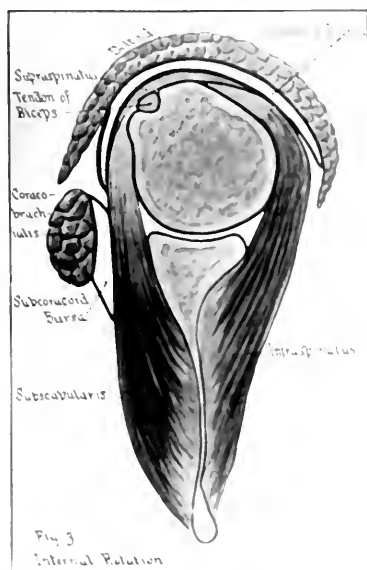
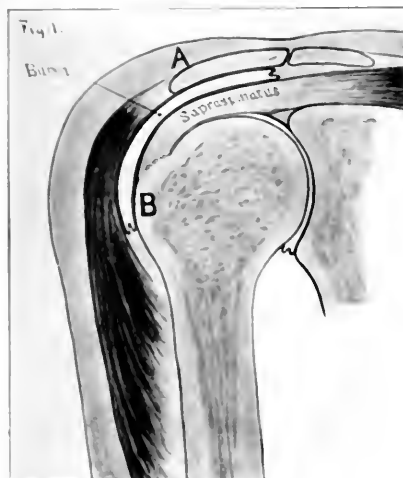
diagnosis is arrived at and then the true condition as found at autopsy is shown; if the diagnosis was at fault the reason for this is sought for by review of the case.

In addition he attends weekly lectures upon live medical subjects.

In following our student, now taking course A, that suitable for a general practitioner, after completing his three months in medicine he takes up pediatrics; he spends one month in the wards of the Infants' or Children's Hospital, together with some time spent at the South Department of the City Hospital where he studies contagious disease.

In surgery, his next month, he has ward work, — examination of cases, recording of histories, establishing of diagnosis, etherization of patients, dressing of injuries, wounds and fractures, close observation of operations, seeing the progress of the case with the end result. The out-patient department work consists of establishing diagnosis, treatment of cases under direction and recording histories.

His next month is devoted to obstetrics; here he lodges at the Lying-in Hospital, devoting his



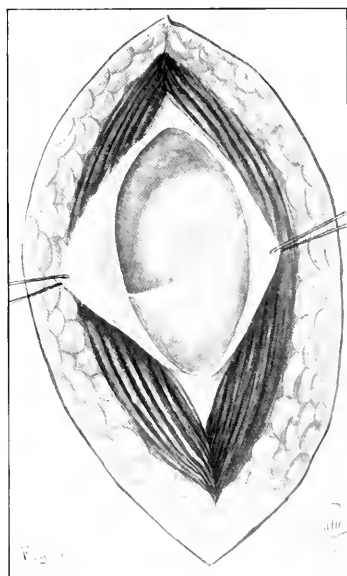
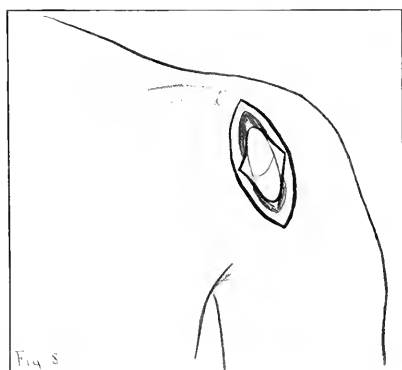
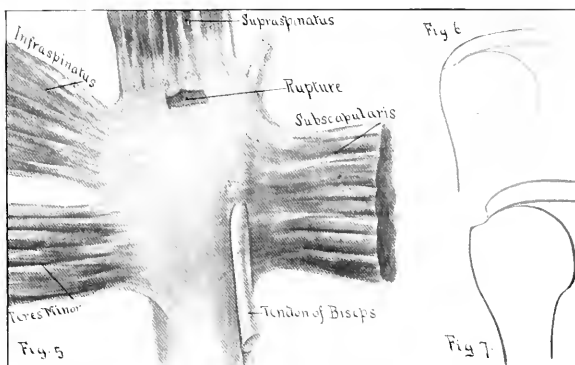


FIG. 10. Showing the characteristic attitude of a patient with subdeltoid adhesions or scapulo-humeral spasm when endeavouring to abduct both arms. Abduction on the affected side is mainly accomplished by rotation of the scapula on the chest wall. The angle between the axis of the humerus and the spine of the scapula is practically the same as if the arm were at the side.

time to attending to out-patient cases; he assists at operations, when his duties permit; makes the daily visit with the visiting physician. In the second half of his course he conducts the convalescence of the cases delivered by him during his resident service, making written reports of the cases; he makes daily ward visits and witnesses operations. The character of his work in the last two months depends upon what courses he chooses to elect, as to whether most of his time is spent in clinical or laboratory work. He could take courses in neurology, dermatology, or gynecology, or various of the more strictly speaking laboratory courses, as histology, physiology or clinical surgical pathology or orthopedics or surgical pathology. The character of the examinations in these various subjects varies within wide limits; they are similar in kind to the examination he takes in his medical months. His daily work counts for a great deal more than formerly, as does also ability to apply his knowledge in a practical way; he would have theses in various of his other electives, as pediatrics and surgery.

After finishing his four years, he receives his degree and then tries for one of the hospitals, not, as formerly, taking his hospital at the beginning or at the end of the first half of his fourth year. He is now compelled to complete his four years of medical study before he becomes eligible for hospital appointment.

It would be interesting to follow our student through his hospital service and up to the time he takes his state examinations. We can judge of the result of his training at the Harvard Medical School by looking at the partial list of graduates from various colleges who have during the past years 1900 to 1904 taken their state examinations, the list taken from *The Journal of the American Medical Association*, May 6, 1905. Out of 134 graduates of the Harvard Medical School taking examinations in 12 states there was not a single one who failed to pass his state examination; we could, therefore, infer with probable safety that the student we have been following would be no less well fitted than those who have preceded him. A partial list of medical schools with the number examined, the number of failures and the per cent of failures is as follows:

GRADUATES OF 1900 TO 1901, INCLUSIVE

Examined, Failed Percent

| | | | |
|----------------------------------|-----|----|-----|
| Harvard, | 131 | 0 | 0.0 |
| Medical College of Georgia, | 30 | 0 | 0.0 |
| Medical College of Ohio, | 43 | 0 | 0.0 |
| Syracuse University, | 31 | 0 | 0.0 |
| Vanderbilt, | 29 | 0 | 0.0 |
| North Western, | 117 | 2 | 1.1 |
| Cornell, | 66 | 1 | 1.5 |
| Bellevue, | 58 | 1 | 1.7 |
| Johns Hopkins, | 58 | 1 | 1.7 |
| University of Minnesota, | 98 | 2 | 2.0 |
| Rush, | 221 | 5 | 2.3 |
| Physicians and Surgeons, N. Y., | 221 | 7 | 3.2 |
| Western Reserve, | 29 | 1 | 3.4 |
| Chicago Physicians and Surgeons, | 227 | 12 | 5.3 |
| Yale, | 36 | 2 | 5.6 |
| University of Pennsylvania, | 118 | 7 | 5.9 |
| Tufts, | 58 | 5 | 7.9 |
| University of Vermont, | 74 | 6 | 8.1 |

ON STIFF AND PAINFUL SHOULDERS.

THE ANATOMY OF THE SUBDELTOID OR SUBACROMIAL BURSA AND ITS CLINICAL IMPORTANCE.* SUBDELTOID BURSITIS

BY E. A. CODMAN, M.D., BOSTON.

It is the purpose of this paper to consider certain cases of obscure lesions of the shoulder joint. These cases are not rare—they are common. Every practitioner sees them occasionally and every large hospital out-patient department, I venture to say, has one or more under treatment at all times. These patients complain of pain and stiffness in the shoulder joint and upper arm. A characteristic complaint is the inability to put the arm back of the neck or behind the small of the back. If women, they cannot do their back hair; if men, they cannot button the back of their suspenders.

I think I have said enough to make you recall the type of case to which I refer. You hear them called "rheumatism," "fibrous ankylosis," "paralysis of the deltoid," "peri-arthritis" and other names. I will speak of the symptoms later in detail.

It is my belief that a consideration of the anatomy and pathology of the subacromial or subdeltooid bursa does much to help us understand the cause of these obscure and annoying lesions and suggests more rational methods of treatment than those usually employed.

ANATOMY

I do not know any book on anatomy to which I can refer you for even a fair description of this bursa. You must go to the cadaver and demonstrate it for yourselves. Anatomists have devoted little attention to it, the reason probably being that its thin walls are easily overlooked in the dissecting room and are not readily demonstrated. You will find it alluded to as the subdeltooid or subacromial bursa or you will find it described as two separate bursae. As a matter of fact it should be called by one name or the other to prevent confusion. I prefer to speak of it as the subdeltooid bursa, because the subdeltooid portion is more important clinically, being more exposed to injury. Even in those cases where a septum between the two is found, they are functionally the same. The point is that this bursa is indispensable in abduction and rotation of the humerus.

Look at this diagram (Figs. 1 and 2.) In order to obtain abduction of the arm the greater tuberosity of the humerus must pass under the acromion process. How could this occur unless a joint existed between these two bones, for if there were no joint or bursa there, the greater tuberosity would carry its roof of deltoid muscle in under the acromion and pinch it. It is easy to illustrate this on the cadaver by stitching the roof of the bursa to its base. It is not difficult to feel on one's own shoulder the rotation of the tuberosity beneath the deltoid fibers and to feel it disappear beneath the acromion when the arm is abducted. Anatomists have been quite insistent on a description of the biceps tendon and the bursa about it,

* Read before the Academy of Medicine at Cleveland, March 17, 1906.

and it is perhaps this point which has distracted their attention from the much larger and more important subdeltoid bursa. The biceps tendon and its serous sheath lie entirely beneath the floor of the subdeltoid bursa and are amply protected from injury by the groove in the humerus in which they lie.

The next diagram (Figs. 3 and 4) shows that the bursa is equally important in rotation of the humerus. It represents a horizontal section just below the edge of the acromion, and is intended to show how the short rotators act in taking up the slack of the joint capsule which is practically composed of the tendons of these muscles. It also shows the necessity for the existence of the subcoracoid bursa which lies between the coraco-brachialis and the subscapularis, for since these two muscles move past one another in opposite directions there must be a bursa between them. It is not uncommon to find this bursa in communication with the subdeltoid bursa.

It has been claimed that there is a normal communication between the subdeltoid bursa and the true joint. This has not been my experience; those cases in which I have found a communication I have regarded as pathological cases, for the reason that this communication has been at the point of insertion of the supraspinatus, which is the point most subject to injury. (Fig. 5.) What the actual percentage is, I do not know, but I think it must be small.

I have said that this bursa has very thin walls; I do not think it could be dissected out as an entire sac because it is so firmly attached to the bony parts of its roof and floor, but it can be readily demonstrated by blowing it up through a fine hollow needle. Its base is formed by the tuberosity of the humerus and the tendons of the short rotators which are inserted into the tuberosity. Its roof is formed by the periosteum beneath the clavicle, the coraco-acromial ligament and the acromion and by the upper part of the fibers of origin of the deltoid muscle. Its limits beneath the deltoid muscle vary considerably, but the outline is apt to be trilobar like a clover leaf and to extend below the edge of the acromion for about an inch and a half at its deepest point. On the whole it is circular in outline, concavo-convex in shape and about the size of the palm of the hand. A very pretty way of demonstrating the bursa is to blow it up with air and then cut carefully down upon it and catch the edges of the serous lining as one does in a laparotomy. If the wound is then held open (Figs. 8 and 9), the shiny surface of the base can be seen passing beneath when the humerus is rotated or abducted. Frequently in doing this one is able to see little folds of serous membrane which roll on themselves like the nictitating membrane in a bird's eye. It is these folds which, acting like partitions, give the bursa its lobulated shape.

PATHOLOGY.

The subdeltoid bursa is a serous space and must be subject to many of the same pathological conditions as other serous spaces, such as other bursæ,

the tendon sheaths, the joints, the pleura and the peritoneum. The unprotected situation of the anterior or subdeltoid portion of the bursa makes it especially liable to direct injury or pressure, and from a mechanical point of view it is the weakest point in the complex mechanism of the shoulder joint. Clinically, the obvious causes of inflammation of this bursa may be enumerated as follows:

- | | | |
|-----------|---|---|
| Trauma. | { | <p>A direct blow on the point of the shoulder, <i>e. g.</i>, a fall.</p> <p>A sudden muscular exertion, <i>e. g.</i>, the effort to protect oneself from falling.</p> <p>Pressure, <i>e. g.</i>, a misapplied bandage. Over use, <i>e. g.</i>, as in a baseball pitcher.</p> <p>Unaccustomed use, <i>e. g.</i>, baseball without proper training.</p> |
| Fixation. | { | <p>Following the treatment of the above minor lesions.</p> <p>Following operations on the breast, hand and arm.</p> <p>Following treatment of fractures of the hand or arm, especially fracture and dislocation of the head of the humerus.</p> |
| Sepsis. | { | <p>1. Non-suppurative infection : <i>e. g.</i>, Acute rheumatism. Gonorrhea. Grippe. (Idiopathic cases.)</p> <p>2. Suppurative.</p> <p>3. Tubercular.</p> |

It is not too much to assume that this bursa, like other bursæ, in response to the insult of trauma, overuse, unaccustomed use or infection, may become inflamed, may become over distended with fluid, may be filled with fibrous exudate or that its contiguous surfaces may become adherent.

The anatomy shows that the smooth action of the adjacent surfaces is necessary for abduction and rotation. Is it surprising that after a blow on the point of the shoulder the patient complains of pain on abduction and rotation and that involuntary reflex spasm holds the joint so fixed that the scapula follows all the motions of the humerus? Is it surprising that if fixation of the arm is maintained for a number of weeks, either through misdirected treatment or the unwillingness of the patient to let those two bruised and inflamed surfaces slide on one another, that adhesion between the two takes place?

Suppose again that overuse is the cause of the insult to the serous surfaces. A baseball pitcher is constantly abducting his arm, carrying the tuberosity in under his acromion and then snapping it out again as he throws the ball. There is a point of friction at the highest part of the tuberosity passes under the acromion, and its continued irritation leads to a "glass arm." When adhesion takes place the arm becomes "shoulder bound."

In other cases the irritation may come from sepsis, from gonorrhea, from sudden exertion or

pressure, but we have a right by analogy to assume the same sequence of conditions: an inflamed serous membrane, reflex spasm, sero-fibrinous exudate and finally adhesion of the surfaces. This is the ordinary life history, I believe, of inflammation of the subdeltoid bursa. When, in the severe cases, adhesion has taken place the pain subsides and the symptom is stiffness due to actual mechanical limitation. At this point nature begins her slow cure. As in the peritonium the adhesions melt away and those that have become organized stretch until at length the normal arc of motion is restored. The prognosis will depend on the extent and degree of the original inflammation and the character of the treatment. It is easy to see also that when fixation in the sling position has been long maintained that the neighboring muscles must show secondary changes. Imagine the difficulty the contracted subscapularis must have to get into the position shown in the diagram (Figs. 3 and 4) in external rotation, and see also the consequences to the tendon of the infraspinatus which is too stiff and inflamed to take up the slack of the capsule.

Up to this point the pathology has been assumed from analogous conditions in other structures. The following facts have been obtained by my actual observation:

1. In a case operated on by Dr. F. B. Harrington there was staphylococcus-bearing pus. The lining of the bursa was dark red, velvety, and at least one eighth of an inch in thickness. It closely resembled the appearances usually found in a septic knee joint.

2. In a chronic case of unknown cause operated on by myself, I found an excess of straw-colored fluid. The lining of the bursa was about as thick as blotting paper, slightly reddened, and the cavity contained numerous adhesions, some of which were stretched into bands between the roof and floor of the bursa. These adhesions did not differ greatly from those seen in chronic peritonitis. I have also seen three similar cases of stretched adhesions in dissecting-room specimens.

3. In five cases on opening the bursa at operation I have found firm fibrous adhesions which effectually prevented abduction until torn. In two cases they were too strong to be separated with the finger and had to be divided with scissors. I have also found this condition a number of times in the dissecting room.

In one cadaver which had the typical limitations of subdeltoid adhesion, I made a careful dissection of all the muscles of the shoulder. Even after dividing all the other muscles and the anterior part of the capsule as well, I found that the subdeltoid adhesions alone maintained the limitation of abduction and external rotation. (This specimen was shown at the meeting.)

4. In two operated cases I found a split in the capsule between the tendons of the supra- and infra-spinatus. I have also seen this in the cadaver.

5. In five dissecting-room specimens I found a condition which I believe to be due to a traumatic partial rupture of the tendon of the infraspinatus.

The condition is illustrated in this diagram. (Figs. 5, 6 and 7.)

6. I have seen a considerable number of x-rays of cases of trauma to the shoulder in which there was evidence that a chip of bone was torn from the tip of the tuberosity at the point of the insertion of the supraspinatus. In one of these cases I operated and found the roof of the bursa adherent over the point of fracture, but the periosteum forming the base of the bursa was not actually torn through, although the fragment could be felt beneath it.

7. In one case operated on and in several cadavers I have found a small area of bare bone on the tuberosity at the base of the bursa. In two other specimens the fibrous tissue on the base of the bursa was shredded, almost exposing the bone.

SYMPTOMS

Clinically, we find cases of all degrees of severity, from mere discomfort in raising the arm to firm ankylosis. To me it seems most convenient to separate four types, although border-line cases occur frequently.

Type I. Acute or Recent Cases.—The essential characteristic of this type is that the joint is locked by reflex spasm (Fig. 10.) The inflamed surfaces no more enjoy friction than do the pleural surfaces in acute pleurisy or the joint surfaces in acute hip disease. Hence active or passive rotation of the humerus cannot be performed without pain except to the extent permitted by the movement of the scapula on the chest wall. There is, however, *always* some motion between the scapula and the humerus both in abduction and rotation; there is *never* complete ankylosis. It is characteristic of inflammation of the subdeltoid bursa that a small amount (about 10°) of painless motion persists in the true shoulder joint. In other words, anatomically the humerus can be moved somewhat without calling into play the inflamed portions of the surfaces of the bursa. A patient with acute subdeltoid bursitis will willingly follow you about the room if you take hold of his hand even without a jin jitsu grip, rather than allow you to rotate or abduct his arm.

Outside of this peculiar limitation due to the anatomical situation of the bursa we have also the usual signs and symptoms which accompany inflammation of any bursa or joint, except that these signs are somewhat more difficult to make out because they must be felt through the deltoid muscle.

Local tenderness will sometimes be definite enough to allow accurate mapping out of the limits of the bursa. This is especially true in cases of inflammatory origin where the whole bursa is involved, but in traumatic cases from a blow on the point of the shoulder or a tear in the tendon of the supraspinatus the tenderness will be greatest at one point. This point is almost always on the greater tuberosity just external to the bicipital groove (Fig. 5.) When the arm is in the straight position this point forms the most prominent part of the shoulder. It is ana-

tomically the weakest point in the shoulder because it is not protected by acromion or clavicle and over it the fibers of the deltoid are particularly thin. Normally this particular point is somewhat sensitive, as you may demonstrate on yourselves. It is at this point too where the greatest stress comes when the supraspinatus is acting as an abductor of the arm, and *vice versa* when the arm is forced down against the action of this muscle.

Pain is a constant symptom and is especially annoying at night. Patients complain that they cannot get into a comfortable position. A curious feature of the pain is its location. Almost invariably it is felt in the distribution of the external or internal cutaneous nerve down the arm from the point above spoken of to the external condyle, passing to the outer or inner side of the biceps muscle. I cannot explain why this is so, unless it is due to involvement of the musculo-cutaneous nerve in its passage through the coraco-brachialis muscle. Possibly spasms of this muscle or inflammation in its substance might cause pressure on the nerve. Perhaps it is comparable to the sacral pain from pelvic disease or shoulder pain in biliary inflammation. Frequently the patient thinks the seat of the trouble is at the insertion of the deltoid muscle.

Demonstrable effusion is not uncommon but is somewhat disguised by the overlying tissues. I have known the pain to become less when the effusion appeared. Frequently, even when effusion cannot be demonstrated, there is a puffy feel much like that which is frequently found in subacute inflammation of the knee joint.

To sum up Type I, we may say that its essential characteristic is scapulo-humeral spasm. Left to themselves the patients maintain the sling position, and I am sorry to say that the average physician encourages them in this for a long time. The result is that the condition tends to become chronic.

Type II.—The characteristic of this type is actual adhesion instead of muscular spasm. Where one begins and the other ends is hard to determine. Full surgical anesthesia is the best test.

In these cases the symptoms are the chronic edition of Type I, except that the extreme type is *painless* fibrous adhesion with atrophy of the shoulder muscles. Some cases complain of no pain whatever and seek advice simply for the limitation of motion. This is not the rule, however, for there is usually some complaint of pain. It is in this stage when the influence of the character of the individual on the course of the disease is most pronounced, for the man who can persist in the use of his tender and atrophic muscles in spite of the soreness has a great advantage over the hypersensitive neurasthenic who has not the courage to stretch his painful adhesions. In some cases the nervous element is so strong that the case passes for neuritis, and much has been written about reflex joint atrophy by neurologists. In some cases these secondary changes in the nerves and muscles almost amount to a real paralysis and simulate lesions of the brachial

plexus or progressive muscular atrophy. Contractures of the fingers are not uncommon in the very severe cases and the forearm may resemble the condition found in Volkman's paralysis.

Even where these alarming secondary changes have taken place, I believe that the primary cause is in the subdeltoid bursa and that proper treatment will eventually bring about cure.

Type III.—The essential characteristic of this type is pain in certain motions, but the ability to carry out the full arc of motion of the joints persists. The pain is felt only in certain positions or motions but is nearly always in that point of abduction at which the tip of the tuberosity passes under the acromion. Sometimes it is called forth by rotary or pushing motions. Sometimes the patient will be unable to produce it when he wishes to demonstrate it to you. Sometimes for days at a time he is annoyed by it and again it will appear to improve.

I have as yet operated on but one case of this type, because the symptoms are seldom severe enough to demand operative interference. I have alluded to this case above as having a thickened serous membrane with occasional adhesions from floor to ceiling. I believe that other cases would show that the trouble was due to such local conditions as those which I have described in the cadaver,—bits of synovial fringe, swelling of the "necrotizing folds," frayed tendon or rough areas of bare bone. In the cadaver these irregular areas are usually found at the above-mentioned point of least resistance, *i. e.*, on top of the greater tuberosity just external to the bicipital groove at the insertion of the tendon of the supraspinatus. These cases when they become worse may pass into Type I or Type II.

Type IV.—Severe traumatic cases in which rupture of the supraspinatus tendon takes place or the facet of bone to which it is attached is torn off. These cases are often seen with subcoracoid dislocation and would more appropriately be discussed with fractures or as a separate paper. The reason that I speak of them here is that they are really ruptures of the base of the bursa and not an uncommon cause of subdeltoid adhesions. One theoretical symptom (since the supraspinatus is put out of action) should be the persistence of passive and loss of active abduction. I am not ready to state this as yet, however, because in most cases the pain is so great that spasm prevents even passive motion and later adhesion takes the place of spasm. When rupture of the tendon does take place it probably is only partial and a Y-shaped attachment still remains to perform part of the function. (Fig. 5.) In a similar way the quadriceps may extend the femur when the patella is broken if the lateral expansions of its tendon are not torn. Nevertheless, I believe that the active function of the supraspinatus is important in elevation of the arm.

DIAGNOSIS.

The most important consideration in diagnosis is the question of whether the true joint is involved or the bursa alone. Cases of pure subdeltoid

bursitis always admit of a few degrees of painless abduction, flexion and extension and internal rotation, even when the scapula is held firmly fixed. When the true joint is involved the spasmoid fixation is nearly absolute. Palpation of the joint from the axilla is also painless in subdeltoid bursitis, while in disease of the true joint, signs of tenderness are elicited.

The relative positions of the humerus and scapula are decidedly different in the two cases if there is distention with fluid. This can be beautifully shown on a dissected specimen by blowing up the joint and the bursa alternately with air. When the joint is distended the angle between the humerus and inner border of the scapula is obtuse; when the bursa is distended it is acute.

The x-ray is a valuable test. Where the articular surfaces of the bones show signs of disease the true joint must be involved.

It is my belief that nearly always when the joint is diseased the bursa is also, but that the reverse is not true. I believe that it will be found that most minor lesions of the shoulder joint involve the bursa and few involve the true joint. This might be expected *a priori* from the mechanical structure of the two, for it is hard to conceive of a better protected, more simply constructed joint than the true joint, or a more exposed, more delicate or more complicated structure than the subdeltoid bursa. On the other hand, severe diseases as tuberculosis or sepsis usually involve them both and the same may be said of severe trauma.

I have intentionally not gone into the diagnosis of other shoulder lesions, such as fractures, dislocations, rupture of the biceps tendon, deep axillary abscess, caries sciea, muscular rheumatism, rheumatoid and osteoid arthritis acromioclavicular dislocation, circumflex paralysis, etc. Subdeltoid bursitis is far more common than any one of these and yet it is usually left out when the others are considered. I venture to say that there are some in this audience who have had it themselves!

TREATMENT.

Type I. The acute cases.—The indications would seem to be to obtain relief of pain and to give physiological rest during the inflammatory stage and when this has passed, to prevent adhesion of the inflamed surfaces.

Some years ago Dr. Geo. H. Monks, of Boston, showed at a meeting of the Suffolk District Medical Society a splint for the treatment of "painful shoulders." The splint held the arm at right angles to the body in internal rotation and abduction. Some cases which he reported showed that he was dealing with the same lesions of which I am speaking, and the relief he described from his splint was striking. I have used his splint for the relief of pain in these cases with good success. A practical substitute is to seat the patient sideways at a table and let him rest his arm on a pillow. This gives great relief. As soon as the pain will allow it, gentle passive

motion should be begun to prevent adhesion. Above all do not allow the patient to maintain his arm in the sling position. Do not put on a Velpeau bandage. It has seemed to me that counter irritants have about as much tendency to promote adhesion as to restrain it. I regret to say that a few years ago I recommended the very treatment which I now condemn.¹

Type II. Chronic adherent cases.—These are the most common cases and, as I have said, vary according to the severity of the original inflammation, the treatment given during the acute stage, and the age, extent and density of the adhesions.

Twenty-four years ago Dr. J. J. Putnam, of Boston, in speaking of these cases as "peri-arthritis," suggested manipulation under ether, and reported gratifying results. The usual treatment in Boston has been according to Dr. Putnam's suggestion in the more severe cases, and passive motion, baking, counterirritants, etc., in the milder cases. On the whole, the results have been poor as far as time and pain are concerned, although ultimate recovery at length occurs. In cases which are etherized and manipulated, the adhesions may be felt to tear, sometimes with alarming violence, so that one suspects fracture of the humerus or rupture of the internal lateral ligament of the elbow. It is my belief that this tearing takes place in the subdeltoid and subcoracoid bursae and possibly also in the older cases in the substance of the contracted shortened subscapularis muscle. The peculiar sensation under the operator's hand, as if the internal lateral ligaments of the elbow joint were tearing, I think may be due to the transmitted vibration of the coraco-brachialis muscle which is stretched like a bow string from the coracoid process to the center of the humerus. As external rotation tears the subscapularis from beneath it, the effect is like that of a fiddle bow on the strings.

The disappointing part after this rupturing of the adhesions is that when the effect of the ether has passed off we find our patient again in the acute stage. Scapulo-humeral spasm again fixes the joint and the patient must show more than ordinary courage if he will permit passive motion again before the adhesions reform. As a rule he hugs his arm in the sling position. It occurred to me that in allowing the patient to thus hold his arm in a sling position, *i. e.*, abduction and internal rotation, we were allowing the raw surfaces which were before adherent, to be again in apposition and that this reunion was favored. Why then should we not carry them as far apart as possible so that each will be opposite a healthy serous surface. This can be done by a modification of the Monks' splint which will hold the arm in abduction and external rotation. (Fig. II.)

In this connection I want to emphasize an anatomical point which is of great importance, although I do not find it in the textbooks. *Complete abduction (abduction of the humerus necessitates external rotation.* Flex your elbow to

¹ BOSTON MEDICAL AND SURGICAL JOURNAL Vol. cl. No. 14 April 7, 1904

a right angle, rotate your humerus inward and try to abduct. When your humerus arrives at the horizontal it will no longer move on the scapula, for the base of the tuberosity impinges on the acromion. Now rotate the humerus outward and you will find that the arm will go into full abduction because the tuberosity rolls out of the way and the concavity of the surgical neck takes its place and does not impinge on the acromion.



FIG. 11. Showing the abduction splint in position, the patient standing. It is held by a figure eight bandage which crosses behind the shoulders and by a belt about the hips. The arm is at rest.

DESCRIPTION OF SPLINT.

The frame of the splint which I use is made of iron wire (diameter one quarter inch), stiff enough to maintain its form and to carry the weight of the arm securely. Sufficient cotton wadding to thoroughly pad it is bandaged over it and the whole covered with cotton or linen cloth. The general shape is shown in the photograph. It should be just long enough to extend from the axilla to the seat of the chair on which the patient sits. It is best held in position by a belt around the pelvis and a figure eight flannel bandage about the shoulders crossing back of the neck. A pad should be placed in the opposite axilla to prevent excoriation of the skin by the bandage.

During the first twenty-four hours and afterwards, if worn at night, the arm should also be lightly bandaged to the projecting part of the splint. Additional security is given by the application of a swathe which may be pinned to the bandage in the axilla.

The corollary of this observation is that in breaking up our adhesions we must not forget to break those that prevent external rotation. I have shown that these might be in the subcoracoid bursa as well as in the subdeltoid. In the position obtained by my splint it would be impossible for the raw surface on the tuberosity to adhere to the healthy under surface of the acromion, and even if it did, when the splint was removed gravity would aid the patient to break any adhesions.

The practical results of this treatment have been good. After the splint has been on for twenty-four hours the bandage on the arm may be removed and without changing the position of the splint the arm can be held up straight in complete abduction with little or no pain. The hand can be placed back of the head and held there by the patient. I have kept the arm on the splint except for daily exercise for periods varying from two days to two weeks. I think that one week is enough and that during the second week the splint should be worn only an hour a day. After this it is necessary to insist that the patient puts his arm through the full arc of motion once a day or more. I have been much aided in the after-treatment of my cases by the use of the Zander apparatus at the Massachusetts General Hospital under the direction of Dr. Max Böhm. These exercises have been of great help in assisting the patient to maintain the mobility of the joint and to strengthen the atrophied muscles. If one has not access to a Zander apparatus the same result can be accomplished by judicious passive movements and active exercises.

It is obvious that even if the adherent surfaces are broken apart and allowed to heal opposite healthy surfaces that we still must cope with the stiffened and atrophied short rotators which take weeks or months to return to their normal strength. My only claim for the use of my splint is that it greatly shortens the period of restoration of function. By preventing the adhesions from reforming it allows us to break the vicious circle and to begin at once to exercise the muscles.

In certain severe cases I have felt that I could better make sure of breaking the adhesions by an actual cutting operation. I feared the manipulation under ether would be more apt to rupture the muscle substance of the contracted subscapularis than to break the subdeltoid adhesions (in fact, in cases of long standing, I believe this rupture of the muscle may occur). In six cases I have made an incision into the bursa (Figs. 8 and 9) on the point of the shoulder between the fibers of the deltoid and have torn the adhesions with my finger before using the leverage with the arm. In two cases it was necessary to divide the adhesions with scissors. In others, after the adhesions of the subdeltoid bursa had been ruptured, I had to break those in the subcoracoid bursa by using the leverage of the forearm in outward rotation. It is during this motion that the peculiar sensation of rupture of the internal ligament of the elbow takes place.

Be it understood, however, that I do not recom-

mend a cutting operation in these cases to a surgeon who has not recently familiarized himself with the anatomy of the bursa. So far, I have seen no ill consequences follow it, for the reason that the postoperative use of the splint has prevented the reformation of adhesions. As a rule, I recommend merely manipulation under ether followed by fixation on the abduction splint.

Type III.—I have no essential improvements to offer on the usual methods of treatment applied to these cases. If they are severe I consider that exploration in the hope of finding a fringe or other irregularity of the bursal surface is justifiable. I have operated on but one case of this kind and was encouraged by the result, although this case was otherwise complicated and was in a particularly unfavorable subject.

Type IV.—Cases of this type when seen soon after the injury might be treated on Dr. Monks' splint or my modification; when seen late in the adherent stage, they should be etherized and put on the splint as in Type II.

If one could make the diagnosis with certainty of rupture of the tendon of the supraspinatus, incision and suture might be considered.

CONCLUSION.

On a number of previous occasions I have made observations on anatomical and surgical subjects which I imagined original. Later I have found that the ground had been covered by others, frequently by some of the famous physicians of my own city. In this case after the observations were made on which this paper is founded, my attention was called to the above mentioned article by Dr. Putnam,² written twenty-four years ago and giving an excellent clinical description of these cases as "peri-arthritis," although not the same explanation of the causes. Eight years later Dr. Monks³ presented to the same society a splint for the treatment of the same cases. The idea of this splint was to relieve pain by maintaining the arm in abduction. At the meeting at which Dr. Monks showed his splint, Dr. Maurice H. Richardson asked Dr. Monks if he had noticed that in these cases the scapula moved with the humerus, and questioned whether the trouble might not be due to adhesions of the subdeltoid bursa. Dr. Monks had not noticed about the scapula, but thought that possibly the bursa had something to do with the disability.

It is evident that my paper is but a combination of these three ideas. If the trouble is due to subdeltoid adhesions (Richardson), the logical treatment is breaking the adhesions (Putnam) and relieving pain by the use of an abduction splint (Monks).

A superficial examination of the literature shows that some of these ideas have also been brought forward by others. Hyperemia of this bursa has frequently been reported. The best article I have seen is by Kuster,⁴ but even he fails

to appreciate the influence of the subdeltoid adhesions on rotation; in fact, he refuses to make a diagnosis of subdeltoid bursitis unless the ability to rotate is present. In italics he says: "Dagegen ist die passive Rotation stets ganz oder fast ganz frie und schmerzlos; und auf dies Symptom lege ich den Hauptnachdruck."

As far as I have been able to find yet, I may claim that my anatomical observation that external rotation of the humerus is necessary for complete elevation of the arm is original. So, also, is the idea of preventing the reformation of adhesions by a splint which holds the arm in abduction and external rotation, thus bringing raw surfaces opposite healthy ones. I hope some of you may be induced to try this treatment, for I am sure that in my own hands it has been most encouraging. If the splint is properly applied, there should be no pain during the day. The discomfort at night is the greatest drawback but is worth enduring for the sake of the result obtained.

Perhaps if you are successful in thus limbering up the motions of the shoulder you may be able to apply this same principle to other articulations, for adhesion of the bursa about them may be the cause of most stiff joints!

I believe it is possible to make new bursa where the normal ones have become obliterated.

DESCRIPTION OF PLATES.

Fig. 1 is a diagram from a frozen section. Notice the deltoid and its origin from the edge of the acromion. Notice the subdeltoid bursa with its roof made by the under surface of the acromion and by the fascia beneath the upper portion of the deltoid. Its base is on the greater tuberosity and the tendon of the supraspinatus which separates it like an interarticular fibro-cartilage from the true joint.

Fig. 2 illustrates the condition which would be found in complete abduction, the tuberosity having passed under the acromion and the point (B) having passed the point (A). The elastic deltoid has taken up the slack on one end and the supraspinatus at the other. It is obvious that the floor of the bursa as it lies on the tendon of the supraspinatus and the tuberosity must be a smooth, even, rounded surface. As a matter of fact, the first time one cuts into this bursa one is almost startled to find how much the floor of it looks like the cartilaginous surface of the bone!

It is obvious that if the surfaces of the bursa between the points A and B in Fig. 1 were adherent, it would be impossible for the joint to pass into the position shown in Fig. 2.

Figs. 3 and 4. A diagrammatic representation of a horizontal section through the head of the humerus to indicate the lateral extent of the bursa and the necessity for its existence to allow the greater tuberosity to rotate beneath the deltoid. Notice also how the tendon of the supraspinatus is stretched around the head of the bone in internal rotation and how the tendon of the subscapularis is stretched around the head in the opposite direction in external rotation. This stretching occurs not in the tendons themselves, which are very short, but in the muscles which, by their construction take up the slack of the capsule of the joint. In fact, the capsule of the joint is really made up of the tendons and muscular bellies of these short rotators. It can be easily imagined how a simultaneous spasm of these muscles would lock the joint, for, in the

² Putnam: BOSTON MEDICAL AND SURGICAL JOURNAL, N. S. 30, 1880.

³ Monks: *Ibid.*, Aug. 21, 1890.

⁴ Kuster: *Archiv f. Klin. Chir.* v. 67, p. 1013.

normal motion one must relax as the other contracts. Notice also the cross section of the coraco-brachialis and the necessity for the subcoracoid bursa which lies between it and the subscapularis. Since the two muscles work at right angles to one another the bursa is indispensable.

Fig. 5. This diagram is intended to illustrate the condition found when the tendon of the supraspinatus is torn. The head of the humerus is seen from the outer side with the tendons and portions of the muscular bellies of the short rotators still attached to it. There is a small tear in the tendon of the supraspinatus near its insertion on the greater tuberosity. The rupture is not complete because the Y-shaped expansion of the tendon still holds it in fair position. As explained in the text, this lesion is at the point where the shoulder is most prominent.

Figs. 6 and 7. Contrast the smooth contour made by the tuberosity and the overlying tendon in normal condition with the irregular contour found when the tendon has been ruptured. Sometimes instead of ruptures of the tendon taking place the portion of the tuberosity to which it is inserted is torn off.

Figs. 8 and 9 illustrate the appearance when an incision into the normal bursa has been made. The extremely thin superior layer of the bursa is caught with sutures and the smooth shining base is seen in the middle. The base can be moved by rotation of the arm without moving the superior layer. In the lower portion of the wound is seen one of the "nictitating folds."

THE COMPLICATIONS OF ACUTE PNEUMONIA.

BY HENRY JACKSON, M.D., BOSTON.

I REPORT the complications noted in 1,320 cases of acute croupous pneumonia at the Boston City Hospital. In 150 of the cases I carefully reviewed the records myself, but in 1,170 I simply took the complications reported in the card catalogue, therefore the report cannot be considered as absolutely correct, as the card catalogue is not made by physicians. Further, the paper does not deal with the exact pathologic findings of the pathologist, but rather with what may be called the clinical complications of the disease. Therefore I make no record of the condition of the kidneys or of the heart, except in a few instances in which acute endocarditis was a prominent feature of the primary disease.

The complications directly connected with the lung are as follows: Empyema, 22 cases; abscess lung, 4 cases; gangrene, 3 cases; pleurisy with large effusion, 23 cases; unresolved pneumonia, 5 cases.

The complication of organs not directly connected with the lung: Pericarditis, 22 cases; phlebitis, 6 cases; meningitis, 3 cases; joint disease, 1 case; neuritis, 2 cases.

In the consideration of the complications of pneumonia the main interest centers in the complication of empyema, the great importance of this complication being that its prompt recognition is essential in saving much suffering to the patient if not in saving his life. One of the most common mistakes that we see in consultation is the failure to recognize empyema; the patient is supposed to have unresolved pneumonia.

Though empyema occasionally appears during

the course of the pneumonia, it is most usual in the course of the first week after the crisis. In these cases the empyema was first shown in the majority of cases by a rise in temperature without apparent cause on the second or third day after the crisis, or the temperature never fell absolutely to normal. In none of the cases did the empyema appear later than six days after the crisis. In the vast majority of cases a rise in temperature during convalescence means empyema, abscess or tuberculosis. The temperature may be elevated in unresolved pneumonia but the opposite is the rule. The most important early clinical sign of empyema is the absence of tactile fremitus over the area of the pus formation and the modified egophonic voice sounds. In such cases aspiration is obligatory, and aspiration with a large needle.

Unresolved Pneumonia.—As Dr. Williams has especially pointed out by examination with the x-ray, we know that absolute return to the normal occurs only a long time after perfect return to health. We do not expect to find the lung normal by physical examination in less than a week or ten days. But in a very few cases complete consolidation is found to exist many weeks after the onset of the pneumonia, and to such cases, after the careful elimination of all other pathologic processes, we give the name of unresolved pneumonia or delayed resolution. Only five such cases do I find recorded in the hospital cases reviewed, a number suspiciously small and in marked contrast to the large number of cases of empyema. In only one of these cases was there fever persisting throughout the course of the consolidation. This was a case of my own, a little girl of eight years, who entered with the history of an acute pulmonary disease. There was a complete consolidation of the whole left lung which continued for weeks. In spite of the evidence of consolidation and absence of signs of fluid, only by negative aspiration was I convinced that it was not a case of empyema. I then made a probable diagnosis of an acute tubercular pneumonia, which was overthrown by a perfect recovery after many weeks passed in the hospital. The small number of cases of "unresolved pneumonia" bears out my previous assertion that such a condition is probably empyema, possibly tubercular, and that only the established fact that neither of these conditions exists warrants a diagnosis of pneumonia unresolved.

Aside from several cases in which a small abscess cavity was found post-mortem, two clinical cases of abscess of the lung following pneumonia are noted. In both, the diagnosis was made by the expectoration of a very large amount of pus on several occasions though perfect recovery followed. As recovery is rare in such a condition, I give one case.

Girl, seventeen, entered the hospital, Jan. 10. Pneumonia lower left lung. Crisis Jan. 18. Irregular temperature, Jan. 25 to Feb. 9, with continuance of signs of consolidation. Feb. 10 spit up a pint of pus; the same Feb. 11; no bacilli of tuberculosis. After

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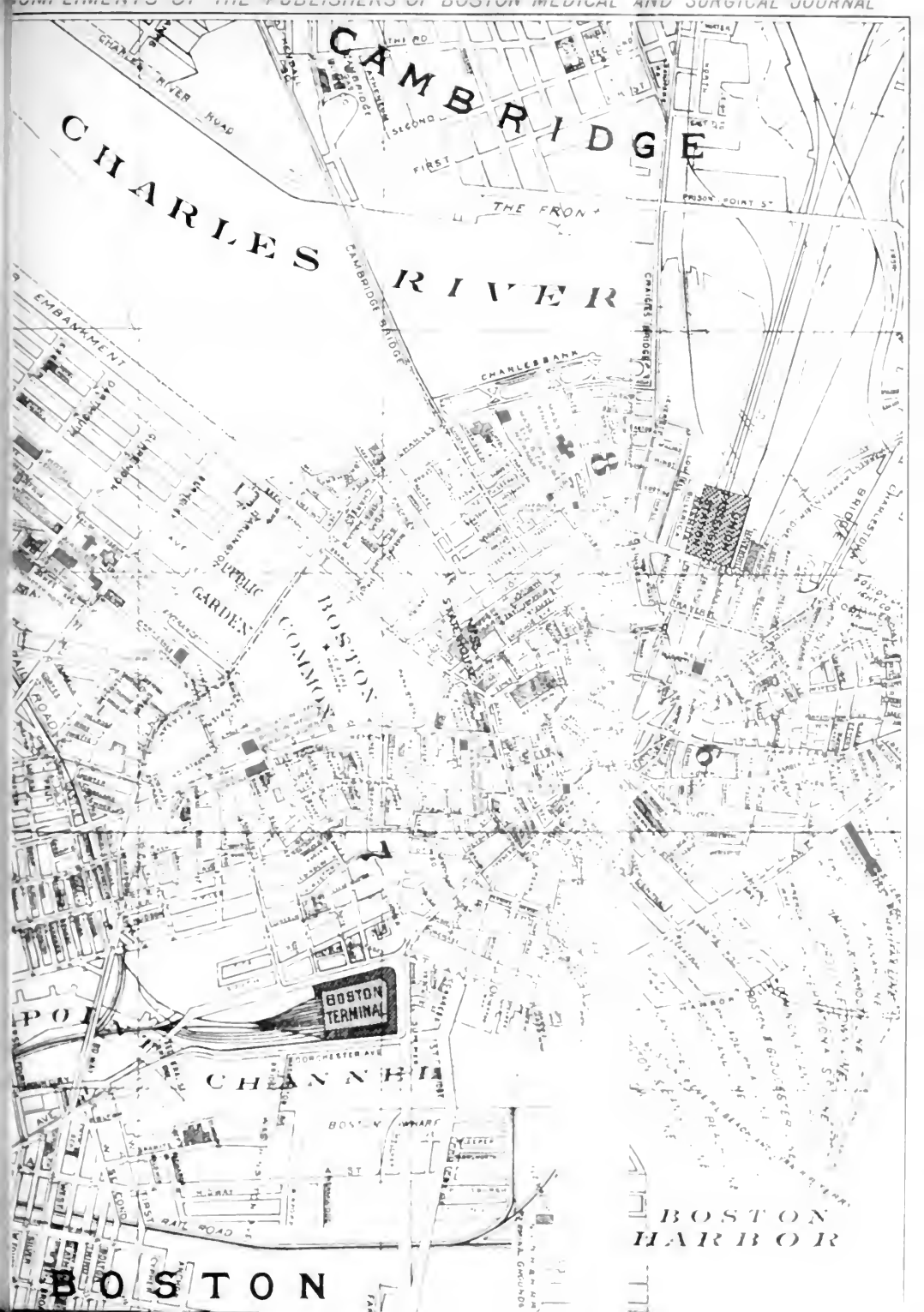
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MAP OF BOSTON

Showing Places of Interest for Members of the
American Medical Association



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THE COMPLICATION

BY HENRY

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this date gradual improvement and no fever. March 6 discharged well. X-ray showed a slight shadow in lower left lung.

In two other cases the diagnosis of abscess was made during life by the finding of emphysema, irregular temperature, and the expectoration of much fetid pus. Both were confirmed by autopsy, one in the apex and one in the base of the right lung.

In twenty-three cases there was a large pleuritic effusion, demonstrated by tapping.

Pericarditis.—Twenty-two cases of pericarditis are tabulated. These cases are taken from the card catalogue of the clinical records, and therefore are not to be reckoned as an accurate estimate of all the possible pathologic findings that we would expect from a tabulation of post-mortem statistics. Pericarditis is recognized as a disease often obscure and in some cases impossible of diagnosis. Eighteen of these cases were diagnosed, usually by the evidence afforded by a to and fro friction sound, though in a small number pericarditis was recognized by the evidence afforded by increased area of the heart dullness and faint heart sounds. As in four cases advanced pericarditis, with and without fluid, was found post-mortem, in which no record was made of signs which might suggest such a condition, it is evident that in all probability the disease was much more common than is suggested by my statistics.

No suggestion is offered by these cases as to the probable or possible cause of the involvement of the pericardium by the pneumococcus, either in the age of the patients, their previous condition of health or the location of the pulmonary process. Pericarditis is an early complication of pneumonia, as in all the cases where the diagnosis was made the signs were found in sixteen on entrance and within two days in the two other cases. In the other cases there is no reason, from the history of the cases to consider that pericarditis was a late complication causative of death. Herein this complication presents a very marked difference from empyema, which in the large majority of cases appears late, after the crisis, and at times when convalescence appears to be established.

In ten of the cases a post-mortem was made giving us accurate data as to the condition of the other organs. In one case there was extensive involvement of the valves of the heart, an acute ulcerative endocarditis being found of the aortic and tricuspid valves. In three other cases there were a few acute granulations on one of the valves. Pleural effusion was found in four cases and purulent effusion in two cases. Aside from these pathologic findings, there was found only the acute pneumonia. These findings do not suggest that the pericarditis was a manifestation of any acute pneumococcus septicaemia which had involved many organs.

In ten cases the pericarditis was dry, in four purulent, and in eight serous, estimating as serous all the cases which presented evidence of increase of the size of the heart, yet ended in recovery, and the cases that showed enlargement but were not

proven to be purulent by aspiration or autopsy. Pericarditis is a very serious complication of pneumonia; fifteen cases died, seven recovered. Of the seven that recovered in only two did the size of the heart warrant the diagnosis of an increase in the fluid sufficient to give rise to diagnosis by percussion. That is to say, in five cases a pericardial friction rub was heard which in no way affected the course of the disease, but the demonstration of fluid in the pericardial cavity makes the prognosis very grave. As demonstrative of the obscurity of pericarditis I quote one case.

A man fifty-three years of age entered the hospital Jan. 3. He had been sick for one week. Pneumonia was found in the right base, and a pericardial friction rub was heard over the heart. On the fourth day the temperature fell to normal and remained so; his condition was very poor. No enlargement of the heart area was recorded. He died one week after the crisis.

Seven hundred and fifty cc. purulent fluid was found in the pericardial cavity; 1,250 cc. purulent fluid in the right pleural cavity; an abscess cavity in the right lower lobe with a resolving pneumonia.

It is of course certain that some or all of these conditions should have been diagnosed, but as a matter of fact no definite diagnosis was made according to the hospital record.

Phlebitis.—This is apparently a rather rare complication of pneumonia. In distinction from other diseases which are the result of the pulmonary infection, it occurred in my series of cases in individuals who were not very sick and showed no signs of a general pneumococcus septicaemia. In most of the cases the course of the disease was mild and convalescence more rapid than in phlebitis associated with typhoid fever. In none of the cases were the patients very sick, and all recovered except a case of cerebral thrombosis, where death was the direct result of the localization of the pathologic process. Six cases are noted, five in the femoral and one in the left lateral sinus. So far as the history of the cases shows no possible cause can be suggested for the occurrence of the phlebitis.

CASE I. Man, fifty-four years of age. Entered the hospital on Feb. 10. He had had pain in the right side and cough for three days. There was found a pneumonia of the lower right lobe. The temperature dropped on the seventh day. On entrance the right leg was swollen and slightly tender, the veins of the leg were prominent and a distinct hard vein could be felt along the inner side of the thigh. For ten days after the first fall in temperature there was a little fever. On Feb. 28, eighteenth day, the leg was practically normal. The man was discharged well on March 31.

CASE II. Woman, nineteen years of age. Entered the hospital on May 9. Five days before entrance there was a chill followed by pain in the right side. There was a pneumonia in the right middle and lower lobes. The temperature fell by crisis on May 13. On May 23 pain developed in the left thigh and leg. Leucocytes, 13,800. The leg was moderately swollen, tender and pain on motion. Very slight fever. Patient discharged well on July 9.

CASE III. Man, thirty-five. Entered the hospital

Nov. 9. He gave a history of chills with fever on several days. The diagnosis was obscure at entrance, as no pulmonary trouble was found. Spleen not enlarged and no plasmodia found. On the fourth day in the hospital a pneumonia was discovered in the right lower lung. The temperature was irregular, falling gradually by lysis. On Nov. 24 there was much pain with tenderness and redness in the right leg from thigh to foot. Later the pain became severe. Dec. 7 there was pain in the left leg which was swollen and tender. He was up in a chair on Dec. 19, and was discharged practically well on Jan. 2.

CASE IV. Man, forty-one. Entered the hospital Nov. 8. He had had irregular fever and chills for ten days. There was a pneumonia in the left lower back. No tubercle bacilli were found. Nov. 23, pain and tenderness left thigh and leg. The femoral vein was felt as a swollen cord. There was a moderate fever Nov. 23 to Nov. 29. Dec. 6, lung clear; no pulmonary symptoms. He was discharged well on Dec. 9.

CASE V. Man, twenty-eight. Entered the hospital Jan. 1. On Dec. 26 he had a chill accompanied by vomiting, cough and pain in the right side. There was pneumonia in the right lower lung. The pneumonia was complicated with delirium tremens. Temperature fell by crisis on Jan. 3. On Jan. 10, pain in right thigh and knee. The leg was swollen and tender. Temperature 99-100. In a few days the leg was much swollen. On Jan. 23 when the right leg was better, similar symptoms appeared on the left with a rather higher temperature. During February there was a reduction of the pain, but both legs were much swollen. In March less swelling, and April 6 the patient was discharged practically well. This was the only case in which the severity of the phlebitis was in any way comparable to the similar condition when occurring in typhoid fever.

CASE VI. Cerebral thrombosis. Man, forty. Entered the hospital Feb. 2. On Jan. 29, cough; followed in one day by dyspnea and pain in the lower part of the left chest. On entrance there was intense bronchial respiration with dullness in the left lower back which later spread to the upper lobe. Feb. 5, heart action feeble with a low temperature. Feb. 9, pulse weak and temperature subnormal. Feb. 13, respiration shallow; rapid failure and death.

Autopsy: Heart not abnormal. Whole left lung solidified. Brain: The veins of the pia over the posterior part of the left cerebrum were much injected with abundant diffuse hemorrhages into the substance of the pia. On the left side was a firm, grayish yellow thrombus in the vein of the fissure of Rolando, with similar thrombi in other veins.

No clinical symptoms were noted suggestive of the diagnosis of organic cerebral disease.

In two of the cases there was a phlebitis of both femorals. In only one case, number four, was the course of the pneumonia at variance with the ordinary type.

Meningitis.—Three cases are reported. In only one of the cases were signs present which warranted the diagnosis of acute organic cerebral trouble. It is certainly possible that a review of autopsy diagnoses might show that a meningitis was less rare than is suggested by the clinical records. Acute and often violent delirium is certainly common in severe cases of pneumonia which end fatally.

CASE I. Man, sixty-three. Entered the hospital April 22. On April 20 he had severe headache and later fainted; he was unconscious but a short time.

April 21, less pain in the head, vomited, and delirium came on. On entrance there was a pneumonia in the right lower lung. April 26 and 27 the pneumonia spread throughout the right lung. No signs were noted diagnostic of cerebral trouble, and only the acute headache in the prodromal period might have made such a diagnosis probable. On April 28 there was suddenly an attack of violent muscular twitching, the eyes were rolled upwards and to the left. Death.

Autopsy: Solidification of the whole right lung. The pia over the left occipital lobe and the posterior part of the left parietal lobe was considerably thickened. There was much thick yellow fluid. A similar condition, though less marked, was noted in the right hemisphere. Pneumococci were found in the lung and pia.

CASE II. Woman, forty. Entered the hospital May 14. She had a chill on May 10. Pneumonia was found at the right base on entrance. The temperature fell by crisis on the 19th of May. On May 31 there was a rise in temperature with pain and tenderness in the right ear. The ear drum was incised immediately and the drainage was free. In spite of free drainage she gradually failed, became unconscious on June 4 and died. Though no autopsy was obtained, the diagnosis seems permissible.

CASE III. Man, twenty-nine. Entered the hospital Nov. 9. Since Nov. 3, general pain, fever, cough and sweating. Dyspnea; no chill. At entrance there was a pneumonia in the front and back. Nov. 11, a marked crisis. On Nov. 12 there was slight dullness on the left back with bronchial respiration. Nov. 17, rise in temperature, chill, vomiting. He seemed very sick and weak. Delirium developed. In spite of the marked severity of the general condition the pulse was slow. Nov. 21, external strabismus of left eye. Death.

Autopsy: On the mitral valves acute vegetations with loss of substance. Consolidation due to acute pneumonia in both lungs. Old tubercular process at one apex. Brain: Dura thickened. In sulci yellow fibrino-purulent material, most marked at the base. Pneumococci present. "General pneumococcal septicemia."

This case demonstrated in an interesting manner the value of a slow pulse as an indication of organic cerebral trouble when it is found in a patient whose general condition is bad, where we would naturally find a very rapid pulse were the rate not modified by the cerebral process.

Two cases of peripheral neuritis are reported in some detail on account of the rarity of this lesion in connection with pneumonia.

1. Woman, forty-eight. No alcohol; no syphilis. Entered March 26. Two chills before entrance. Pulmonary examination negative; much pain and tenderness in the arms and legs; knee jerks absent. March 29, pneumonia right lower lobe. April 7, lungs clear. The oculist reported a paralysis of third nerve right and sixth nerve left with slight atrophy of the nerve. She was discharged practically well.

2. A man, seventy. Very severe double pneumonia. At the end of the first week of convalescence paresis of both legs which gradually increased to an almost complete loss of power. After many weeks a complete restoration of muscular power. In this case tenderness was slight and pain hardly noticed.

THE class of 1909 of Cornell University on May 18 presented to Dr. Austin Flint a silver loving cup in memory of his retirement from the chair of physiology on account of reaching the age limit. — *Medical Record*.

Massachusetts General Hospital.

CLINICAL MEETING.

CASE OF TUMOR OF SPINAL CORD, CORRECTLY DIAGNOSTICATED; OPERATION; MARKED IMPROVEMENT.

BY HENRY C. BALDWIN, M.D.

A. O'D., single; aged twenty-nine.

Aug. 26, 1905, I was asked to see a patient who was said to have ataxic paraplegia, and who gave the following history. In January, 1904, she noticed that her right foot was numb and cold. This numbness increased until the entire leg was affected, and the leg became rigid. The right leg seemed as strong as the left leg, but she could not bend it at the knee and she dragged the toe. The following December the left leg became affected and rigid, and in about six weeks, that is, some time in February, 1905, she became unable to walk at all. She lost control of the sphincters of the bladder and rectum at this time. Some time in April she noticed that the palm of the right hand was not so full as formerly, and later the left hand became somewhat affected. At the time that she noticed the slight wasting of the hand, there was some numbness on the outside of the arm in the ulnar distribution.

She was well nourished and had good color. There was marked contraction of the pupil of the right eye and narrowing of the right palpebral fissure, which she had noticed for the previous year. There was no involvement of any cranial nerves. There was wasting more marked on the right side than on the left, in the ulnar and median distribution of both hands and arms, and there was disturbed sensation in the ulnar distribution. Both legs were rigid, and for the most part in the position of flexion. She was troubled with frequent jumpings of both legs, which caused her a good deal of annoyance. At times the legs would be crossed. There was curvature of the spine with a convexity towards the left. The patient complained of sweating and flushing on the right side of the body. On testing sensation, there was anesthesia in both legs, and this anesthesia extended to the region midway between the umbilicus and the breasts. Above this point sensation was practically normal except in the ulnar distribution as stated. There was no disturbance of sensation to heat and cold when complete anesthesia was absent.

In both supraclavicular regions there were small nodules the size of a hen's egg. There was also a nodule in the right thigh. The diagnosis was made at this time of tumor pressing on the cord probably multiple. The patient was sent into the hospital for observation and examination of tumors.

The patient was asked about pain and said that she had had no pain from the beginning of her trouble.

Examination of the tumor removed from the right thigh showed it to be a fibro-sarcoma. Immediate laminectomy was urged. The opinion that the lesion was multiple, one tumor being located between the sixth and eighth dorsal vertebrae, and the other tumor between the fifth cervical and the first dorsal, proved to be incorrect.

A laminectomy Sept. 18 by Dr. C. L. Scudder in which the fifth, sixth and seventh dorsal vertebrae were opened, showed normal appearing cord at this level. On Nov. 7, a second laminectomy was performed by Dr. Scudder, the fifth, sixth and seventh cervical and first dorsal vertebrae being opened. An extra-dural tumor was found growing from the side of the fifth cervical vertebra. It was encapsulated and was removed. Microscopically it is a fibro-sarcoma.

The tumor, for the most part, was situated anteriorly to the cord, and this situation accounts for the absence of pain, which is unusual, pain being considered one of the principal symptoms of tumor of the cord. The tumor extended downward, and was about the size of a peach stone. The cord posteriorly did not look much compressed, but it was flattened and compressed, especially on the right side and anteriorly, to such a degree that the question of any improvement from the operation seemed doubtful.

In both operations the dura was opened and afterwards stitched together.

The patient had no unusual symptoms after either laminectomy, and made a good recovery. Following the second operation there was hiccoughing for a period, which showed irritation of the phrenic nerve.

Sensation had returned in both legs within a week after the second operation. Early in December the patient moved the toes of her left foot, and a little later she regained complete control of the sphincters of the bladder and rectum, and began to move the toes of her right foot. The rigidity of the legs has gradually disappeared, and she can now straighten out her left leg and partially straighten out the right leg. Both legs have increased in size. The right hand and arm have grown larger, and she can now sew and write, which she could not do at the time of the operation.

Sensation is perfect everywhere. The narrowing of the right palpebral fissure and the contraction of the right pupil have improved now that the irritation of the first dorsal nerve no longer exists. The patient can stand on her left leg by holding on to something, and will probably soon be able to walk with crutches.

The patient has already improved far beyond the expectation at the time of the operation, and this recovery has been sooner than was looked for. There are undoubtedly some degenerative changes in the cord which will prevent perfect recovery, but there will be further improvement.

In 1898 Schlesinger,¹ in a monograph on "Tumors of the Spinal Cord and Vertebrae," reported four hundred cases of tumor of the spinal cord found in autopsies; over one fourth of these being sarcoma. This was the number found in over 35,000 autopsies, and it is noted that tumor of the cord bears the relation to tumor of the brain in the ratio of one to thirteen.

In 1899 Putnam and Warren² collected thirty-three cases of tumor of the spinal cord that had been operated on up to that time.

In 1903 Starr³ collected fifty-eight cases of tumors of the spinal cord where operation had been performed.

In 1905 Harte⁴ analyzed 92 cases of operation for tumor of the spinal cord. In 72 cases tumors were found in fact the nature of the growth was not stated, 11 were cases of adhesions and 5 of syringomyelia.

Since Harte's paper was written Walton and Paul⁵ have reported one successful and one unsuccessful case of operation for tumor of the spinal cord. Warrington has reported one successful case of operation for tumor of the cervical spine and two cases not included in Harte's lists were reported by Lumsden and successful

¹ Schlesinger, Monograph, Jena, 1898.

² American Journal of Med. & Surg., 1899, 3, 333.

³ Jurgens, Nerv. & Diseases.

⁴ Annals of Surgery, Phila., 1905.

⁵ Boston Medical & Surgical Journal, 1906, 158, 100.

⁶ The Clinician, 1906, 1909.

operations by Ballance at the National Hospital for Paralyzed and Epileptics in London.

Tumors in the cervical region are less common than elsewhere. Putnam and Elliott⁷ (Boston) report one case of tumor of the second and third cervical vertebrae. This case was successfully operated upon, and seems to be the highest localized case on record. Putnam, Krauss and Park⁸ (Buffalo) report a case of tumor at the level of the third cervical vertebra. The tumor which is now reported lay at the level of the fifth cervical vertebra. Woolsey,⁹ Oppenheim,¹⁰ Henschen,¹¹ Walton and Paul¹² and Cushing¹³ each report a case of tumor lying between the sixth cervical and first dorsal vertebrae.

Among the reported cases both tumors are in the cervical region, and this case is the third highest localized tumor.

Regarding the mortality, in the series of Putnam and Warren 16 died within a few days of the operation, and two within six months. Seven are reported as recovered, and improvement is noted in the remainder.

In the series reported by Starr, 32 died; 16 cases recovered from the operation and improved; 10 recovered from the operation, but did not improve because of the degenerative processes in the cord that had occurred previous to the operation.

In the series reported by Harte 43 died and 49 recovered; 29 are reported as cured; 17 improved, and 3 unimproved.

Undoubtedly to-day by improved technique the mortality from the operation is greatly reduced. The success of the operation, so far as the recovery of the patient is concerned, depends upon its early performance, as degenerative changes in the cord occur in consequence of continued pressure upon it.

SCABIES.

BY JOHN T. BOWEN, M.D.

I wish to show several cases of scabies, chiefly for the purpose of emphasizing the frequency of this affection and the failure to recognize it on the part of the general practitioner. During the last two years scabies has been second on the list of skin diseases treated at the Out-Patient Department of the Massachusetts General Hospital, eczema as usual occupying the first place. During the last year there were 315 new cases of scabies.

These figures refer simply to the individuals who presented themselves, for in the majority of instances there was a history of many other members of the family being affected. The disease is now so prevalent that the social status and cleanliness of the individual by no means preclude the possibility that he has contracted the disease. The cases shown demonstrate the predilection points of scabies, namely, the

dermatitis and scratch marks on the hands and especially between the fingers, in the folds of the axillae and on the penis and breast. One of the patients shown was a young man who worked in an iron foundry. A squad of workmen, of which he was one, were accustomed to change their clothes in the same room, and of these a large number were affected with the disease.

RECENT RESEARCHES ON THE PATHOLOGY AND ETIOLOGY OF JUVENILE SPINAL DEFORMITIES. (LATERAL CURVATURE OF THE SPINE.)*

BY MAX BÖHM, M.D.

The question: "Which is the cause or, rather, which are the causes of juvenile spinal deformities, called commonly lateral curvature of the spine?" is an old problem. An enormous amount of time and intelligence has been spent in the study of this question. I only need to quote here names such as Hueter, Volkmann, Albert, Eulenburger, Nikoladoni, Mikulicz and others in the past. And the interest taken in this question in the present is still more alive than ever. You all know the name of this excellent scholar, Schulthess, in Zürich, the leader in the scoliosis research work; furthermore, men like Riedinger in Würzburg, Wullstein in Halle, Schanz in Dresden, and last, but not least, Lovett in our city.

Many theories have been advanced—too many; for the great quantity only proves that none of them has been fully satisfactory. And if I introduce to-night a new feature into the etiology of spinal deformities, I dare it only on account of well-founded facts, on account of pathological findings. The study of the pathology of juvenile spinal deformities is a somewhat difficult matter, since those cases come extremely seldom to autopsy; and the scoliotic specimens, found in museums, show the secondary changes prevalent, the primary conditions hidden, and thus are not very suitable for pathological studies. So the idea suggested itself to use radiographic means, and indeed after the necessary technical improvements were made, the x-ray proved highly satisfactory, in certain ways even better than autopsy, for it showed the conditions as they exist in the living body, that is to say, under the influence of muscular action and elastic tissues.

The cases I examined represent two types of lateral curvature. (Demonstration of cases.) The first type, as represented in this girl (Ev. S.), is the characteristic triple curve, left lumbar, right dorsal, left cervical. No distinct primary curve could be made out. The second type may be seen in these two cases (A. B. and Br. T.). There is a decidedly primary left lumbar curve present with compensation in the other regions of the spine.

The two different types can be studied more

⁷ Journal of Nervous and Mental Disease, 1903.

⁸ Am. Journal of Medical Sciences, 1903.

⁹ Med. News, 1904.

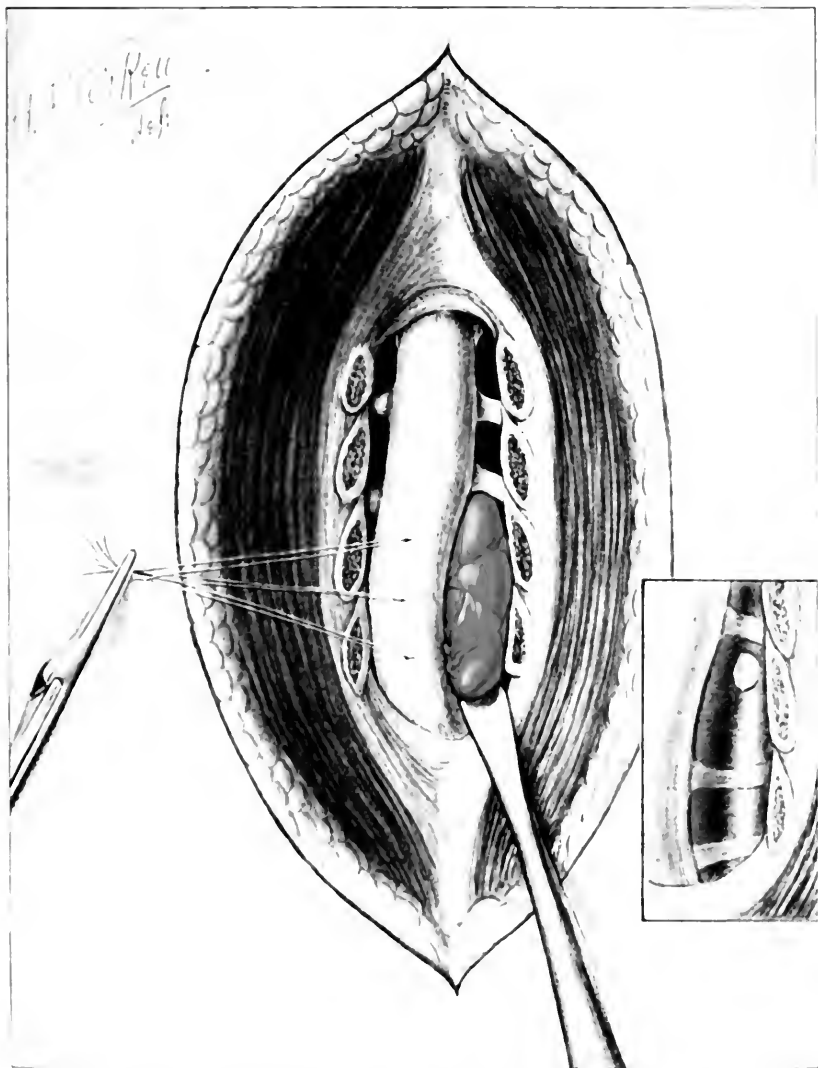
¹⁰ Text Book Nervous Disease, 1904.

¹¹ Mith. Grenz. Med. u. Chir., 1903.

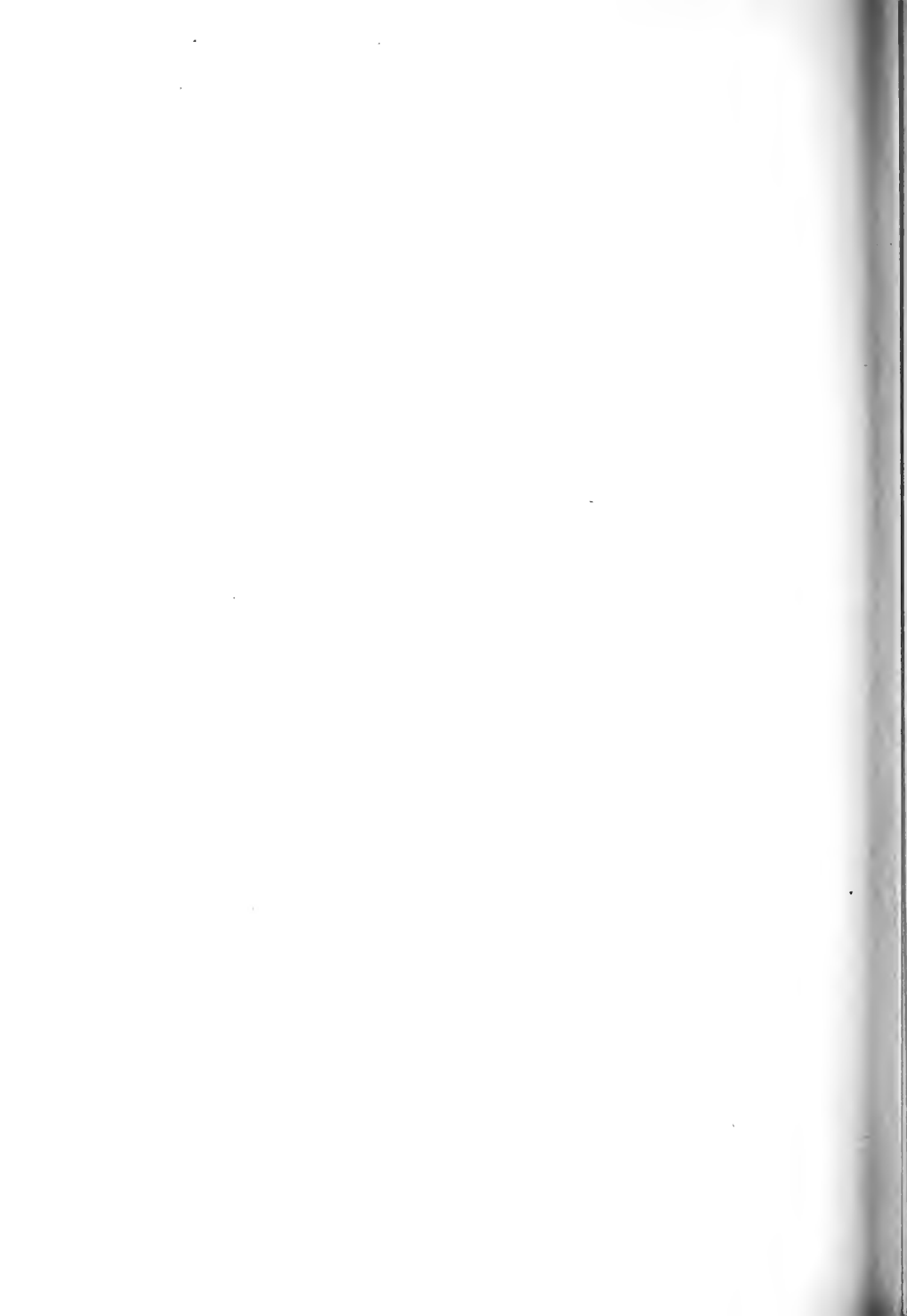
¹² Loc. cit.

¹³ Annals Surgery, 1904.

* Since the reading of this paper my studies lead me to modify some of my opinions. I thought it my duty to alter here some statements that have been affected by my new experiences. (See also Appendix.)



Tumor pressing on cord. (See also p. 100, and p. 101, of this volume.)



thoroughly in the clinical records and measurements. From the history let me only mention that no heredity as to spinal curvatures could be made out and no signs of rickets were present. I wish to emphasize especially the fact, that the deformity in all the cases was first noticed between the tenth and fifteenth years of age.

Of every case a careful x-ray examination was made. This consisted in taking two or three guide pictures of the whole spine, in order to get a rough idea of the deformity present and, chiefly, in order to enable us to count exactly the number of ribs and the number of vertebrae present in the different regions of the whole spine. Then the detail pictures were taken of certain parts of the spine, which seemed to offer abnormal conditions.

and 5 lumbar vertebrae are present. This and various other combinations lead to the occurrence of the so-called "Übergangswirbel," transitional vertebrae, on the boundary of the different regions of the spine.

To use our above-mentioned instance of a spine, containing 11 dorsal, 6 lumbar vertebrae on the left, 12 dorsal, 5 lumbar vertebrae on the right; this phenomenon gives rise to a transitional vertebra on the lumbodorsal boundary, to a dorso-lumbar vertebra, showing left lumbar, right dorsal character. The same may occur in the cervicodorsal region, on the lumbosacral and finally on the sacrocoxygeal boundary. It is known to the anatomist, that correlations exist between all these "Variations," (Dwight, Adolph). We shall to-night give all

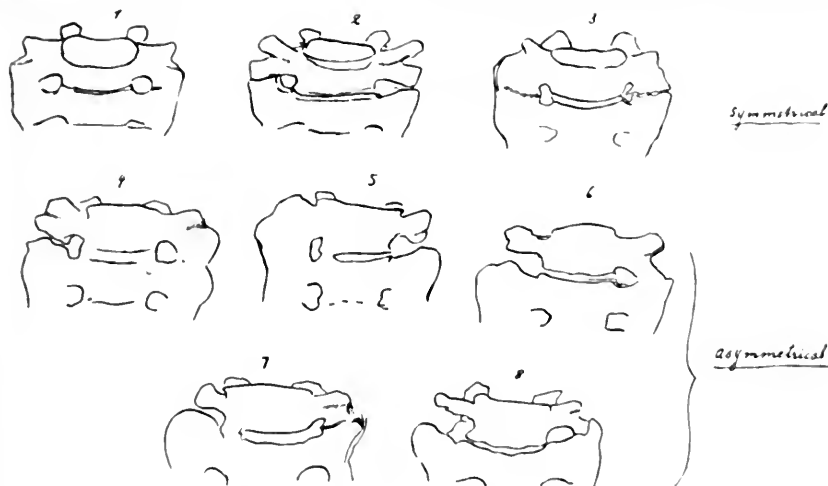


FIG. 1. After Durr. Sacro-lumbar. Übergangswirbel.

The results were surprising for each case offered abnormalities as to the division of the spine, as to the numbers of vertebrae, which make up the different regions of the spine; all the cases showed "numerical variations," as the anatomical term is. Before I demonstrate to you the x-rays, let me give you a short résumé of the anatomical character of the anomalies, we have to deal with.

If, normally, the human spine has 7 cervical, 12 dorsal, 5 lumbar, 5 sacral and 4 coxygeal vertebrae, we find that a certain percentage of men show so-called numerical variations; for instance, 11 dorsal, or 4 lumbar vertebrae and so on. This may take place symmetrically but it may also occur asymmetrically, i. e., it may concern only one half of the spine (left or right or both halves but in a different way). We may have, for instance, on the left side of the spine 11 dorsal and 6 lumbar vertebrae, while on the right side the normal conditions of 12 dorsal

and 5 lumbar vertebrae are present. This and various other combinations lead to the occurrence of the so-called "Übergangswirbel," transitional vertebrae, on the boundary of the different regions of the spine.

To use our above-mentioned instance of a spine, containing 11 dorsal, 6 lumbar vertebrae on the left, 12 dorsal, 5 lumbar vertebrae on the right; this phenomenon gives rise to a transitional vertebra on the lumbodorsal boundary, to a dorso-lumbar vertebra, showing left lumbar, right dorsal character. The same may occur in the cervicodorsal region, on the lumbosacral and finally on the sacrocoxygeal boundary. It is known to the anatomist, that correlations exist between all these "Variations," (Dwight, Adolph). We shall to-night give all

these are the conditions that interest us the most at present.

In studying these affections and their relation to deformities of the spine, the question comes up at once: How often do we find these numerical anomalies in the spine and especially in the lumbosacral region? Exact knowledge of their frequency is necessary in order to find out whether in our cases the anomalies are only incidental or represent the cause.

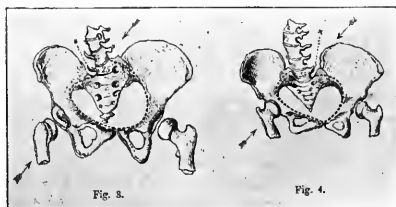


FIG. 3. — Oblique-oval pelvis and lumbar scoliosis with lumbosacral "Zwischenwirbel." From Welcker (1881).

The statistics of Bardeen are of great help to us. Let me give you shortly the results of his and other statistics.

(1) About 4.74 % of all human adult beings have 23 presacral vertebrae; about 4.3% have 25 presacral vertebrae.

(2) A lumbosacral vertebra occurs in .99%, a sacrolumbar vertebra in 1.41% of all human beings.

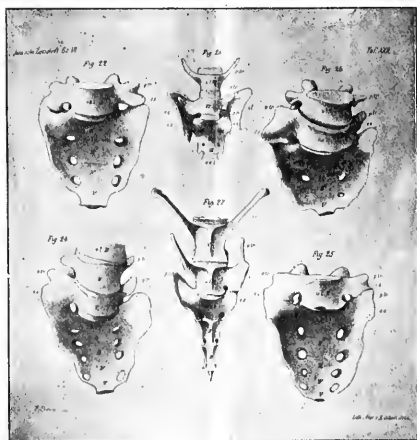


FIG. 2.

(3) If the number of presacral vertebrae is normal, the sacrum contains, in 4.07%, 6 vertebrae; in 1.51%, $\frac{5}{2}$ vertebrae (*i. e.*, one sacral half has 5, the other has 6 vertebrae); in .45%, $\frac{4}{2}$ vertebrae (*i. e.*, one half 4, the other 5).

N. B. The division into sexes and the affection of both sides may be seen in the original.

The next question must be: Do the anatomical specimens show lateral curvatures of the spine, when variations in the lumbosacral region are found?

You see here some photographs from anatomical works, that show you the influence of the lumbosacral variations in deforming the spine. Another interesting question is: Which is the genesis of our anomaly?

It can only be understood on the ground of embryology. We are fortunate in having excellent researches on the development of the spine, done by Bardeen, anatomist in Missouri, formerly of Johns Hopkins University. The following description is a very short account of his work as far as it is here concerned. At the end of the second week the embryonic body shows fourteen spinal segments (myotomes), which increase gradually and reach at the end of the fourth week the number of 35 to 36. Through resegmentation of the sclerotomes and regressive fusion in the coccyx this number is reduced finally to the number of vertebrae found in the adult. Now, at the third week, it is impossible to discriminate between the lumbar, sacral and coccygeal region of the spine, since all these vertebrae at this time look alike. The ileum is at this moment opposite the twenty-first to twenty-sixth segment, which means the later lumbar region of the spine. Gradually the ileum travels downwards till it finally reaches, at the end of the sixth week, its definite place, *i. e.*, the first, second and third sacral vertebrae. As soon as the ileum approaches we see a revolution in these later sacral segments. Their costal elements — the later wings — begin to grow and get finally so perfectly developed that they form a marked distinction to the lumbar segment. Thus it is the ileum which determines the regions in the caudal part of the spine. Now as Wiedersheim has shown, the ileum is phylogenetically as well as ontogenetically younger than the free extremity, and its development in a certain way depends upon the development of the free extremity. So we may say that the normal development of the regions of the caudal part of the spine depends in its last cause upon the development of the free lower extremities. The genesis of the Zwischenwirbel is now clear. If the ileum in its way downward is troubled, it may remain higher and thus produce a sacral vertebra, where we should expect a lumbar one. It may, on the other hand, travel lower than normally and thus lumbarise a vertebra which in normal development would show a sacral character. This may be symmetrical and then we have in the first case a spine with only 23, in the latter case a spine with 25, presacral vertebrae. This anomaly, if it takes place asymmetrically, produces different degrees of Zwischenwirbel with more or less sacral character on one and lumbar character on the other side.

Which are now the causes of the disturbances, which interfere with the normal travelling of the ileum? We know very little about it as far as facts are concerned, and two different theories

have been advanced: The one accepts intrauterine disturbances, the other supposes phylogenetic influences. It seems very plausible that intrauterine troubles as, *e. g.*, abnormal position of the limbs, intrauterine pressure, etc., either directly on the ileum or indirectly on the leg of the fetus could result in such anomalies. Indeed, we sometimes find anatomically, in connection with lumbosacral and sacrolumbar vertebrae, differences in the length of both lower extremities and differences in the size of both ilia. And clinically I could make corresponding findings in our scoliotic cases, as you can see in the measurements of the extremities and in the x-rays of the pelvis. Besides this theory which considers the numerical variations of the spine and especially the lumbosacral variations as due to individual incidents during the earliest period of fetal life, there is another theory which explains these conditions in a phylogenetic way.

This theory, first advanced by Emil Rosenberg in 1876, raised considerable interest and was generally considered as epoch-making. Rosenberg's theory is briefly: In the class of primates the phylogenetic development of the spine tends towards shortening, *i. e.*, the spine of a certain species shows the *less* presacral vertebrae, the *higher* the order, on which it is placed on account of its general system. While, for instance, certain semi-apes have 27 or 28 presacral vertebrae and certain anthropoid apes have 25, man has in common with the gorilla only 24 presacral vertebrae. Thus a segmentary shortening of the spine has phylogenetically taken place.

Starting from this point of view, Rosenberg went over to ontogenetic researches and found these conditions corresponding to pylogeny. He stated that the fetal spine as to its presacral segments is longer than the adult spine, that consequently a shortening of this part of the spine must have taken place during embryonic life. Rosenberg explains this shortening by travelling of the ileum from the twenty-sixth to the twenty-fifth segment of the spine, its definite place. This differs from Bardeen's embryological statements, who found a downward traveling of the ileum. If now the ileum remains lower, so Rosenberg continues, we will get an abnormally long spine, an atavistic abnormality; if it travels too high, we have to deal with the reverse: a futuristic or epigonistic anomaly.

Rosenberg's theory is, in Germany, generally accepted, although Weleker and Holl have opposed it. In fact it has been made the starting point for similar researches, thus Ruge proved that not only the spine, but the whole human trunk has phylogenetically passed through a state of "metamerie shortening."

In other countries Rosenberg's theory found many adherents, although many important objections were raised (Paterson). In America both authors who studied the question, Dwight and Bardeen, either refused it entirely or accepted it only in part.

It seems to me the question, Is the cause of

the numerical variations of the spine an individual or phylogenetic one? is a misleading question. For there is no reason why both theories should fight each other. They may co-exist and we should wait for definite facts brought forward by the adherents of the one or the other theory. And as I can demonstrate to-night, we have now an open field for the study of this question, since we are no more tied up to the museum material but have by the help of the x-rays an unlimited material. After these theoretical explanations let us return to our cases and allow me to demonstrate to you the x-rays of them.

You see here the x-rays of the four spines, belonging to the first type of cases, taken in the above-mentioned manner. I am sorry to say that the cervical spine has not yet been taken; but otherwise the spines are complete.*

Case I has cervical ribs, 1. more developed; 11 dorsal vertebrae with normal dorsal ribs; the next vertebra shows lumbodorsal character, inasmuch as on the left side the rib is missing and on the right rudimentary and the superior articular process show lumbar character. Then 4 true lumbar vertebrae follow. The next vertebra is lumbosacral, *left* sacralised, *right* showing lumbar character. Five true sacral vertebrae follow.

Case II has elongated transverse processes on the seventh cervical, 11 true dorsal, 1 lumbodorsal, bearing rudimentary ribs; 4 lumbar vertebrae, 1 lumbosacral vertebra, 5 sacral vertebrae.

Case III has 12 true dorsal vertebrae, 5 lumbar vertebrae, 1 lumbosacral vertebra (*left* sacralised), 5 sacral vertebrae.

Case IV has 12 dorsal vertebrae, 6 lumbar vertebrae (the first shows on the *right* a trace of a rib), 1 lumbosacral vertebra (the transverse process are bifid and contain each a foramen), 4 sacral vertebrae.

In the next case the presacral spine is normal except that the lower ribs (eleventh and twelfth) are abnormally long and show the same character as those above (*not* floating). The variation is here in the sacral and coccygeal parts.

Case V. The first sacral vertebra shows transverse processes, extended upwards and thus indicating that it is imperfectly sacralised. The last lumbar vertebra disappears as to its body below the level of the sacrum, indicating that it rests on an asymmetrical foundation, apparently on an asymmetrically developed first sacral vertebra, its left inferior articular process is extended downward and apparently fused to the arch of the following vertebra.

In a sixth case of a slight lumbar curve I had just the chance to get an x-ray of the last lumbar vertebra, which gives evidence of a double transverse process on the left side.

A special technical care is required in taking the x-rays and only radiograms have been used, in which the point of interest was *absolutely centered*, since the slightest deviation of the

*As proven by later examination the cervical region contains in all cases the normal number of vertebrae.

compression cylinder produces distorted pictures. Furthermore, the explanation of the pictures offers considerable difficulties: for the possibility existed that we had to deal with x-ray deceptions. From this point of view several experiments were made by Mr. Dodd; for instance, pictures were taken with the patient lying in different positions, on the stomach and so forth.

Finally, the possibility had to be considered that the peculiar position of the fifth lumbar vertebra between a flexible and a fixed part, shapes it in a scoliotic spine in such a peculiar way. Thus we x-rayed a case of poliomyelitic lumbar scoliosis, a curvature in which the fifth lumbar vertebra is exclusively secondarily or mechanically involved. You see the appearance is entirely different. You do not find that this vertebra disappears below the level of the top of the sacrum. A résumé of the radiological or pathological conditions in our cases is thus the following:

Not a single case shows normal numerical conditions, but each shows numerical variations. The first four cases which represent clinically one type show the numerical variation in the presacral part, the other shows the variations in the sacrum and coccygeal part of the spine.

Now it seems to me not to be a very bold undertaking to make the following conclusion: We find numerical variations in the above-mentioned percentage (see statistics); if now *each* case of lateral curvature shows these variations in some form or the other, there must be a closer connection between this clinical affection and the above-mentioned anatomical condition. I should be inclined to call this connection the indirect cause, since it is clear that these variations in themselves cannot be the direct cause. Now we have to look for the direct cause. This is to be seen in the asymmetrical attachment of the extremities (pelvis and free extremity) to the spine and the subsequent, but still primary, asymmetry of the sacral wings. (Cases I, III and V.) Whether a lumbodorsal or a cervicodorsal vertebra can show a symmetry and thus produce a deformity, whether, furthermore, abnormalities in the spinal joints and other abnormal conditions, which sometimes accompany the numerical variations, may give rise to deformities of the spine,—all these are questions which in the future would have to be studied. Only one point shall be mentioned to-night. It was first Tenchini and Dwight who independently demonstrated that in connection with numerical variations of the spine the size of the affected region changes in this sense: that in a numerically enlarged region—take a lumbar spine with 6 vertebrae—the height of each vertebra *decreases*, and *vice versa* in a numerically diminished region the height of each vertebra *increases*. They speak in this sense of a “volumetric compensation.” Papillault confirms Tenchini’s statement and so does Rosenberg. The latter author uses this phenomenon for his theory in the following way: An epigonistic (futuristic) spine is shorter as to the number of vertebrae, but larger as

to the height of each vertebra; an atavistic spine reverse. In looking up this subject in anthropological literature I found an article of Klaatsch, who compares European spines with spines of Australian aborigines and finds the latter decidedly smaller as to the size of the vertebrae. (See photograph A, No. 4.) Further

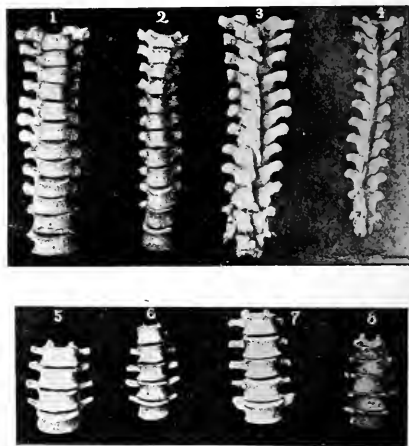


FIG. 4.

1 and 3, European. 2 and 4, Australian. From Klaatsch, Heidelberg.
5 and 7, European. 6 and 8, Australian. From Klaatsch, Heidelberg.

anatomical measurements are necessary; but suppose these above-mentioned statements are true and we apply this theory now to spines with asymmetrical variations, to cases where both halves of the spine are in an unequal state of phylogenetical development, so to speak, we would have to expect differences in the height of the halves of the vertebrae, which must lead to deformities. This is just a hypothesis that I give you to-night, simply as a point which needs our consideration and exact study. However the deformity may result on the basis of the numerical variations, there can be no doubt that our cases are deformities of true congenital character. This is a surprising fact, since, as we clinically stated, the deformity started in all the cases between the tenth and fifteenth years of age. This seems to me another interesting point of the research work; that we found, as far as I know for the first time, true congenital affections, which do not manifest themselves directly after birth, but ten to fifteen years later. Thus I should like to call our cases *scoliosis congenitalis tarda* in order to discriminate them from those well-known congenital spinal deformities which show directly after birth. The question now is: “Have we any sufficient explanation for the fact that this deformity develops so late?”

Naturally, we will think first of the fact that the sacrum in its different parts does not get

fused together until about the twenty-fifth year of age. But this explanation seems not entirely satisfactory and we have to consider the point I already mentioned,—the "volumetric compensation." If this should take place, it could develop only in a later period. For all the researches we have on the postnatal development of the human spine point out that the different vertebrae do not show their typical proportions, size and shape directly after birth but in a later period, practically at puberty (Acby, Langer, Ravenel, Rotch and Dwight). Consequently, deformities based upon the differences of these factors must manifest themselves at the same period. With this newly gained knowledge,—that congenital deformities may show up in a later period,—we will have to revise our knowledge of scoliosis and also other deformities which have some relation to scoliosis and which belong into the same class, for instance, coxa vara, etc. (Belastungsdeformitäten.)

I am unable to say to-night how many of our juvenile spinal deformities are based upon numerical variations, how large this factor is in the etiology of scoliosis; this remains to be proven on a greater material.

I would not finish my paper without having said my heartiest thanks to all those who gave me their help and assistance. In the first place I have to thank Dr. Goldthwait and Dr. Osgood for the great interest they took in my work during the past two years and for the chance they gave me to carry it out by placing at my disposal all the curvature material which came along. Furthermore, my thanks are due to Professor Dwight for anatomical instruction. Dr. Painter and Dr. Brackett had the courtesy to allow me to use some of their material. One glance at the x-rays exhibited to-night will show you what excellent work has been done in this line. This is due to the tireless energy and intelligence of Mr. Dohli; without his kind help I could not have carried out my intentions. Finally, my assistant, Miss Stephens, helped me a great deal in the clinical measurements. To all these my heartiest thanks.

APPENDIX.

Since the above paper was read I have had a chance, by closer study of Dr. Dwight's collection of spines, showing numerical variations, in the Warren Museum of the Harvard Medical School, partly to modify, partly to confirm, my opinion on the relations of juvenile deformities and numerical variations of the spine. My present standpoint — based upon clinical and anatomical examination — is, briefly, the following: Numerical variations of the spine lead by no means in every case to spinal deformities, but may give the occasion to such in a way as above partly stated.

As to the connection between lumbosacral variations and spinal deformities, which I studied especially, my theory is the following: The deformity in its traveling downward may not only vary in its attachment to the spine as to the height of attachment, but also as to the direction, i. e.,

it may be rotated, etc., may finally vary as to its size, the latter in connection with the whole lower extremity. While in the first case a numerical variation of the spine will be the consequence, in the second and third cases a pelvic deformity will result, such as oblique oval pelvis, etc. (known as congenital to obstetricians). Combinations of the three anomalies are frequent. (See Fig. 1.) If these anomalies take place asymmetrically the pedestal of the spine, namely, lower extremities, ilei and sacral wings (costal pieces) will primarily become asymmetrical during embryonic life (first six weeks). When the child begins to walk and gradually becomes adapted to the erect position the bodies of the sacral vertebrae will develop asymmetrically, and this secondarily, due to the abnormal static conditions, caused by the primarily asymmetrical pedestal. Thus the foundation of the spine will become asymmetrical, and finally, in the course of the development, the free, presacral spine must adapt itself to the asymmetrical base. The visible expression of this adaptation is the deformity, which according to this theory cannot develop and manifest itself until the time at which the features of the erect position are gained,—about the puberty.

M. Böhm.

ASCITES FOLLOWING ADHERENT PERICARDITIS AND PERIHEPATITIS.

BY E. G. CUTLER, M.D.

Mrs. E. G., aged thirty-two, with history of rheumatic fever at the age of seven and again at twenty-two, was found in November, 1905, by Dr. Fitz to have mitral stenosis and insufficiency, adhesive pericarditis, perihepatitis and ascites. The noteworthy fact was the limitation of the transudation to the peritoneal cavity chiefly, the rest of body and extremities being but little affected. The patient left the hospital much relieved, Jan. 25, 1906, but returned again April 3, 1906, because of abdominal distention, cough, dyspnea. April 4, she was tapped and twenty-six and a half pints of slightly turbid, greenish tinged fluid of 1.017 specific gravity and 0.9% albumin was removed. She was much relieved and has somewhat improved in general condition. The upper part of the abdomen, hypochondria and epigastrium has been markedly tender. As evidence of adherent pericardium there is systolic retraction and diastolic protrusion at the apex and systolic retraction on both sides of the ensiform cartilage, also in the back over the eighth, ninth, tenth and eleventh ribs, most marked on inspiration. There is retraction of the upper part of the epigastrium on full inspiration, and no shifting of apex on right and left lateral decubitus. This pathological condition has given rise to the symptoms and signs observed in portal obstruction.

A MEMORIAL TABLET FOR THE LATE DR. GEORGE RYERSON FOWLER. At eight o'clock, on Sunday evening, May 27, a memorial tablet for the late Dr. Fowler was unveiled, with appropriate ceremonies, at the Pharmacy building of the Medical Society of the County of Kings. — *New York Medical Journal*.

FRACTURE OF SKULL PROBABLY INVOLVING THE BASE. RECOVERY AFTER OPERATION. ANALYSIS OF THE APHASIA.

BY G. L. WALTON, M.D.,

Physician to Neurological Department, Massachusetts General Hospital,

AND

G. W. W. BREWSTER, M. D.,

Surgeon to Out-Patient Department, Massachusetts General Hospital.

THE following case presents several points of interest to the surgeon and the neurologist. In the first place it shows the importance of considering not only the symptoms but also the violence of the blow in determining the probability of fracture of the skull. In the second place it reminds us that hematoma does not preclude, but may obscure, underlying fracture. In the third place it shows the importance of exploration in case of deepening unconsciousness, even though the fracture involves the base and the condition of the patient is desperate. Finally, it shows the degree to which the brain may be involved and the tolerance it shows for manipulation even in a region concerned in the complicated mechanism of speech.

SURGICAL ASPECT OF CASE.

DR. BREWSTER.

Realizing that the interest in the report of this case, beyond recording a recovery, lies in the neurological observations, I should hesitate to say anything from a purely surgical point of view, was it not for this opportunity of expressing my belief in the importance of the co-operation of neurologist and surgeon, and to emphasize the subsequent conclusions. The problem presented to the surgeon was whether operation offered any chance of relief. With the history of a serious head injury with immediate unconsciousness, a period of improvement, followed by a deepening unconsciousness, a slowing pulse and no localizing symptoms of pressure, the outlook seemed hopeless. As there was a well-defined hematoma in the left parietal region extending forward over the temple and down to the zygoma, it was decided to turn back a flap including the hematoma in order to determine the condition of the underlying bone. It was impossible to demonstrate a fracture by palpation.

Under ether anesthesia a "U" incision was made down to the bone, and the area underlying the hematoma was freed of periosteum. A crack was then seen running from the middle of the frontal region backward and downward in a curved direction an inch in front of the external auditory meatus. No depression could be found, and the crack was so fine that it was not immediately seen. A small trephine opening was then made at approximately its middle, and enlarged upwards and downwards by means of rongeur forceps. There was no evidence of extradural hemorrhage or fragments of bone displaced from the inner table. The dura was tense and did not pulsate. It was incised and gave vent to dark blood. On exploring with the finger in a downward direction a large cavity filled with blood was given an outlet from which the hemorrhage became so profuse that it was necessary to pack in a long strip of gauze. Even then it did not seem possible to control the bleeding, and the wound was partly sutured and a firm dressing tightly bandaged

over it with as much speed as possible, fearing a death from hemorrhage on the operating table.

Although there was a great deal of staining in the first twelve hours the subsequent history unexpectedly proved to be that of an uncomplicated recovery. The pulse almost immediately showed the relief of the pressure slowing. The patient took liquids without difficulty after twelve hours. Consciousness was so slow in returning that in spite of the good general condition no hope of a recovery was admitted for at least three days.

The original packing was removed on the second day and replaced by a small wick. This was taken out on the third day, and the wound allowed to close. There was no wound infection and the healing was steadily progressive and in no way unusual.

The extent of the injury and the source of the hemorrhage can only be conjectured. The blood had the appearance of venous origin, it flowed from the opening within a steady stream and dark in color. There was no sign of arterial spurting nor of bright arterial blood.

It seems probable that there was no laceration of the brain substance and no fragments were seen to escape from the exploratory opening. It seems reasonable to deduce from the progressive symptoms before operation and the recovery following that hemorrhage and its consequent pressure may be controlled even though the source is not determined.

The favorable outcome of this case may serve to encourage a willingness to undertake a class of operations which certainly must always result in a very high mortality. It also serves to emphasize the following conclusions which are already expressed by other writers and not intended as original:

1. In serious head injuries it is clearly indicated to turn back a flap when there is a doubt about the condition of the skull beneath.

2. It may be possible to control an intradural hemorrhage and relieve pressure, which would result fatally without operation.

NEUROLOGICAL ASPECT OF CASE.

DR. WALTON.

The patient, a brakeman, was brought to the hospital unconscious; with history of striking a bridge while on a rapidly moving train. After recovering consciousness he became in a few hours dull, though when roused he would still answer questions intelligently, correctly and without speech defect. The knee-jerk, Achilles, plantar, abdominal and cremasteric reflexes were normal and alike on the two sides. All motions of the face and extremities were alike and of equal strength on both sides. There was no bleeding from the ears or nose, but a few hours after the injury he vomited bloody matter. The lids were black and enormously swollen and the swollen conjunctival sac projected between them.

His first attempts at speech after the operation resulted in jargon, the patient failing to name even simple objects.

On the tenth day the speech had improved sufficiently to permit of its recognition as transcortical with some involvement of the word hearing center. He was able to show the teeth, protrude the tongue and close the eyes at command, showing that this center was not entirely

destroyed, but he did not understand the order to squeeze the hand. Asked to name a watch he said, "Brass; don't mean brass." Shown a coin, he said it was "nearly square," making at the same time a circle with his hand. Asked to say the days of the week answered, "Yes, sir; well, it is Friday, March 20, 1898." When started on the days of the week, named them correctly. That the mind vision center and the writing center, and probably Broca's center with their connections were comparatively intact was shown by the fact that he could read correctly from a magazine, understood gestures and the uses of objects and could copy practically without error. He signed his name as follows:

W R Royall
Broadway
Dr. Bloodsont.

Voluntary speech was at this time greatly improved. He said, "I have been through a terrible sight. You distrust me, but I knew nothing at all until yesterday." The conclusion to be drawn from this form of aphasia is that the lesion was largely limited to the temporal lobe.

On the eleventh day (March 31) the speech had still further improved and a detailed examination was made to determine the character of the aphasia. The method of Bastian was followed. As this author points out, we cannot determine exactly the fibers and centers implicated in a given case or the degree of their involvement, but we can do so with sufficient accuracy to classify the aphasia and to show where the bulk of the injury falls. It will be seen that the injury in this case falls chiefly upon the center for auditory memories in the temporal lobe with its afferent and efferent fibers. This is the type commonly met in abscess of otitic origin. (See report of case by Jack and Walton in *Boston Medical and Surgical Journal*, Vol. CLIV, No. 26, Dec. 26, 1901.)

For convenience of reference a diagram is appended showing the important centers concerned in speech and their connecting fibers. The continued lines show the common paths. The dotted lines show those less constantly in use. For perfect speech the integrity of all is essential.

Systematic Test by Bastian's Method

(a) *Preliminary qualifications.* (1) He is right-handed. (2) There is no paralysis of the face and limbs. Every movement of the hand is

perfect. There is no astereognosis and no lack of facility in handling the tape measure and other objects. (3) He apparently has a good common school education.



Diagram showing: (B) Broca's center for glossokinesthetic memories (memories of movements of the tongue etc. to be reproduced for speech); (A) Auditory memories for words; (V) Visual memories. The chiro-kinaesthetic center (center for memories of movements made in writing) is also indicated in writing is also indicated. (W) Lines and arrows indicate afferent and efferent fibers connecting these centers. The probable seat of the lesion includes (A) with its afferent and efferent fibers.

(b) *Activity of auditory word center and glossokinesthetic (Broca's) center with afferent, commissural and emissive fibers.* (4) The hearing is quite defective, the voice must be raised in order that he hear at four feet. (5) He appreciates ordinary sounds as the ticking of a watch. (6) He comprehends simple speech as the command to put out the tongue, but fails to understand the command to touch the left ear with the right forefinger. He understands simple words as thermometer, but when asked what the thermometer is for he says, "Go and large." Asked what one does with it, answers, "Why, it is larger and smaller." Makes motions showing that he understands what it is for. Apparently understands what the word "explosion" means, making an explosive motion with his lips and saying, "It is in a mine." When asked to copy the numerals $5 + 5 = 10$, he understands the order but writes 14 for 10. Asked what a slate pencil is answers, "You can make it or make a piece of chalk." (7) Spontaneous speech is impaired even for ordinary conversation. Substitutes words but puts in very few meaningless words. In the Lord's Prayer substitutes words and says, "I cannot do it, really." (8) He can name the days of the week and says the alphabet and numbers from 1 to 20 without being started, he says the months of the year. (9) He can repeat short sentences uttered before him. (10) He recognizes times and 11 can whistle Yankee Doodle without being started, adding, "I can whistle very good."

(c) *Activity of the visual word center and chiro-kinaesthetic center with their afferent, commissural and emissive fibers.* (12) His sight is good. There is no homonymous hemianopia. (13) He recognizes printed words but repeats them imperfectly, for example for F. L. Jack he reads Frederick C. Jackson. He appreciates and understands everything that he reads in the paper as he indicates by gestures. (14) He recognizes

letters and numerals. (15 and 16) He can read what he has copied and realizes that his spontaneous writing is unintelligible. The spontaneous writing is very poor. A specimen is appended of his attempts to write "Around the rugged rock, the tree grows" and the

*away from
around the
there the
through
Thundel, muddled
muddled
Thundel, muddled
muddled*

days of the week. (17) He recognizes common objects. (18) He recognizes gestures. (19) His attempts to write spontaneously are very poor, even worse than his attempts to speak. (20) He can write his own name with a mistake of one letter. The days of the week he cannot write. (21) He copies what is set before him nearly correctly. (This case corresponds to two reported by Pitres in that the patient could copy but not write spontaneously. He could not even write to dictation that which he could say with ease, a fact which tends to favor the view of Bastian that there is a cheiro-kinesthetic center — denied by Dejerine — which acts independently of Broca's center, but whose activity may be impaired by loss of conduction from the auditory center to the visual center, or perhaps directly to the cheiro-kinesthetic center.) (22 and 23) He copies numerals easily and does simple calculation. (24, 25, 26 and 27) Not tested on reading or writing music.

(d) *The associated activity of three centers with commissures between the auditory and visual word centers or other sets of afferent and efferent fibers.* (28) He reads sentences aloud. (29) Names words and vowels at sight. (30) Does not name at sight the objects thermometer and knife, but does pin. (31) Can point to common objects whose name he hears, including the thermometer. (32) On dictation writes practically jargon. (33) Can write individual letters and numerals. (34) His ability to play instruments was not inquired into.

On the eighteenth day after the accident (April 7) improvement had continued; spontaneous speech was greatly improved. Some sentences he completed without error, for ex-

ample, "When I get up and am on my feet I will talk all right." He generally makes his wants clear but fails in conversation. He is a little slow in carrying out complicated directions. He names the tune which is whistled before him "Rocky Doodle Dandy." He can carry the air of "Swanee River" but cannot start it. His ability to name objects is much improved. He names "magazine" correctly but calls a thermometer "mometer." Though he copies without error, when asked to write the days of the week he fails completely. When they are dictated to him he partially succeeds in writing them.

On the twenty-third day he was up and about, practically well. At this time he could make his wants known and carry on simple conversation fairly well but with frequent loss of substantives.

This improvement was continuous and on the thirtieth day he conversed with comparative ease. He can name and spell the days of the week perfectly, but still fails to write them perfectly.

CRUSH OF CORD FROM SPINAL FRACTURE.

BY G. L. WALTON, M.D.

I wish to show this picture (see plate) of a spinal cord crush at the level of the sixth cervical vertebra. The principal interest lay in the beautiful manner in which it illustrated complete disintegration at the level of the crush coinciding with an external appearance of normal cord. This is, perhaps, the most frequent finding on operation. In this case the operation (by Dr. E. A. Codman) showed an apparently healthy cord, though the paralysis, sensory and motor, was complete. It was assumed, however, from the symptoms that the cord had been crushed. Death followed within a few days, and the autopsy showed that while the surface of the cord was not ruptured at the spot of injury, a split had occurred at a somewhat lower level with extensive hemorrhage.

There was entire loss of reflexes, as is usual in complete transverse lesion at any level of the cord, contrary to the earlier teaching.

The third of the cross sections shows the condition of the cord at the level of the crush.

Medical Progress.

PROGRESS IN THERAPEUTICS.

BY FREDERICK T. LORD, M.D., BOSTON.

TREATMENT WITH PASSIVE HYPEREMIA.

The cupping glass and suction apparatus, constriction of the limbs for venesection and the control of hemoptysis are methods which have been in use since times long past.

Ambroise Paré was probably the first to use passive hyperemia for ununited fracture. Similar treatment was again recommended by Nicoladoni¹ in 1875. Bruns² and Thomas,³ in 1886,

¹ Nicoladoni: Wiener med. Woch., 1875, Nr. 5, 6. u. 7.

² Bruns: Deut. Chir. Lief. 27, 1886, S. 597.

³ Thomas: Contributions to surgery and medicine. Part VI. The principles of the treatment of fractures and dislocations, London, 1886.

refer to the method and report cases thus treated. Again, in 1887, Helferich⁴ found passive hyperemia useful in favoring callus formation.

August Bier of Bonn has extended the use of passive hyperemia to many other conditions, and in his recent book,⁵ the source of this review can-

fatal dose of anthrax and virulent streptococci. Of sixty-seven rabbits subjected to local passive hyperemia and then injected with these organisms, only sixteen died. All controls and also the same animals, again injected a few weeks later, but unsubjected to passive hyperemia, died

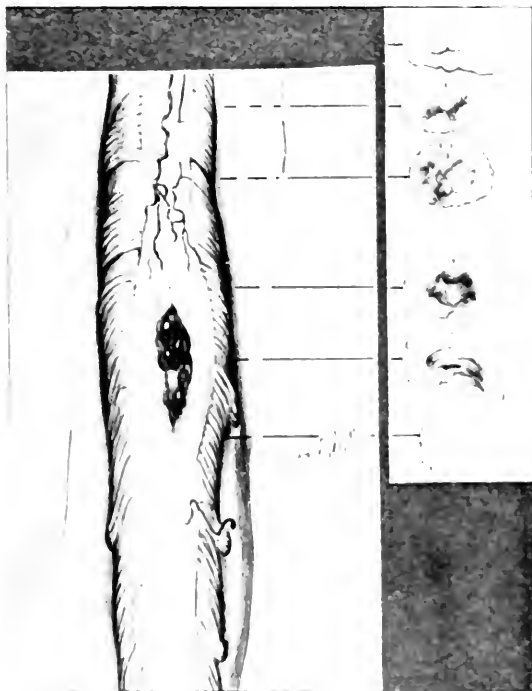
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⁴ Helferich: Verhandl. d. deut. Ges. f. Chir., 1887, n. Bk. S. 249.
⁵ Bier: Hyperemia als Heilmittel. Zweite umgearbeitete Auflage, Leipzig, Verlag von F. C. W. Vogel, 1903.
⁶ Novak: Archiv. f. klin. Chir., 60 Bk., 1 Hft.

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¹¹ Hamburger: Virchow's Archiv, 156 Bk. 2 H. S. 329, 1899.

¹² Klapp: Archiv. f. experimentelle Path. u. Pharmac., 47 Bk.,

S. 86.

¹³ Cavillars u. Donath: Centralbl. f. innere Med., 1900, Nr. 13.

letters and numerals. (15 and 16) He can read what he has copied and realizes that his spontaneous writing is unintelligible. The spontaneous writing is very poor. A specimen is appended of his attempts to write "Around the rug"

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On the eighteenth day after the accident (April 7) improvement had continued; spontaneous speech was greatly improved. Some sentences he completed without error, for ex-

¹ Nicoladoni: Wiener med. Woch., 1875, Nr. 5, 6. u. 7.

² Bruns: Deut. Chir. Lief. 27, 1886, S. 597.

³ Thomas: Contributions to surgery and medicine. Part VI. The principles of the treatment of fractures and dislocations, London, 1886.

refer to the method and report cases thus treated. Again, in 1887, Helferich⁴ found passive hyperemia useful in favoring callus formation.

August Bier of Bonn has extended the use of passive hyperemia to many other conditions, and in his recent book,⁵ the source of this review, carefully describes the technique, the effects of and indications for its application.

TECHNIQUE.

The part to which the constriction is to be applied is first protected by a few turns of gauze bandage. A broad rubber band is then wrapped about the part tight enough to produce moderate stasis. No pain, discomfort or paresthesia should result from the application. It should be loose enough to be forgotten during the performance of ordinary occupation.

At first the subcutaneous veins of the back of the hand, then the larger veins of the forearm, begin to swell. The skin gradually becomes bluish, with a red color of the palm and the extensor surface of the elbow. In the skin of the palm and more sparsely on the back of the hand there are numerous circumscribed small white flecks. On careful observation a delicate venous network can be seen. After about three hours the skin of the forearm is generally blue-red, the fingers, elbow region and back of the hand bright red. The white flecks and veins gradually disappear. After longer application the limb becomes edematous.

In his earlier work Bier recommended the application of a bandage to the peripheral parts of the limb, but has lately discarded this. When possible the site of application should be frequently changed.

In diseases of the extremities suitable for this treatment a rubber band about 6 cm wide is applied at any point above the site of the lesion. In affections of the hip no satisfactory apparatus has yet been made. For disease of the shoulder a rubber tube is used in place of the rubber band. This tube is maintained in its proper position by slipping it under a handkerchief tied about the neck. In the production of stasis about the head, a rubber band from 2 to 3 cm. in width may be used, the neck being protected, as in the extremities, by a gauze bandage. In disease of the testicle a rubber tube may be applied about the scrotum, including one or both testes. A suspensory should be worn during the application.

RELIEF OF PAIN.

The most striking effect of passive hyperemia is the relief of pain. Though the explanation of this is not clear, it may be due to diminished sensitiveness of the nerves under the serous infiltration.

BACTERICIDAL ACTION.

The experiments of Notzel⁶ seem to show that stasis of a limb in animals prevents death after the injection into the congested part of an otherwise

fatal dose of anthrax and virulent streptococci. Of sixty-seven rabbits subjected to local passive hyperemia and then injected with these organisms, only sixteen died. All controls and also the same animals, again injected a few weeks later, but unsubjected to passive hyperemia, died after the injections.

Laqueur⁷ found that *in vitro* the bactericidal power of blood from the region of stasis hyperemia possessed increased bactericidal power over the normal.

The increased bactericidal power of passive hyperemic blood is ascribed by Wessely⁸ to the presence of albuminous substances and antibodies, by Buchner⁹ to an increase in the number of leucocytes in the congested region, by Cornet¹⁰ for tuberculosis to the retention of the products of bacterial metabolism, which stimulate connective tissue formation, by Hamberger¹¹ to the bactericidal action of an increase of carbonic acid.

Bier points out that such favoring influences obtain only when the passive hyperemia is of moderate grade and that suppuration and erysipelas may follow tight and long-continued constriction of an extremity, as he has seen in his own work.

INFLUENCE ON ABSORPTION.

The experiments of Klapp¹² seem to show that active hyperemia is capable of increasing the absorption into the circulation of certain substances. In his work he selected milk sugar for the injections, because of its practically complete excretion in the urine and the readiness with which the amount can be quantitated by polarization. Injections into the hind legs of dogs showed that excretion was much more rapid in sixteen of eighteen trials when the leg was subjected to the influence of a hot-air apparatus. In experiments on himself and students, he found that hyperemia from hot air regularly increased the quickness of absorption, but that the increase was somewhat less striking than in dogs.

The relation between passive hyperemia and absorption is less clear. Klapp's researches show that during the application of the constriction absorption is delayed as might be expected. With the removal of the constriction, however, absorption takes place much more rapidly than normal. The end result, therefore, in short periods of passive hyperemia may be a more rapid absorption than normal. In the use of passive hyperemia for long periods, as Bier frequently recommends we may suppose that absorption is slowed. The results of experimentation are somewhat conflicting. Czylharz and Donath¹³ found that a dose of strychnine, otherwise lethal in two to five minutes, after injection into the hind leg of guinea pigs, failed to kill the animals when the limb was previously constricted with an

⁴ Laqueur: Zeit. f. experimentelle Path. u. Ther., 1905, 1: 141.

⁵ Wessely: Archiv. f. klin. Chir. 141, 2, 11, 2.

⁶ Buchner: Münch. med. Wch., 1899, Nr. 39, p. 40, 41.

⁷ Cornet: Verhandl. ges. Path. u. Ther. Wien, 1899, S. 545.

⁸ 546.

⁹ Hamberger: Virchow's Archiv, 156, 141, 2, 11, S. 329, 1899.

¹⁰ Klapp: Archiv. f. experimentelle Path. u. Pharmac., 47, 141, S. 86.

¹¹ Czylharz u. Donath: Centralbl. f. innere Med., 1900, Nr. 13.

⁴ Helferich: Verhandl. d. Ges. f. Chir., 1887, v. 14, S. 249.

⁵ Bier: Hyperemia als Heilmittel. Zweite umgearbeitete Auflage, Leipzig, Verlag von F. C. W. Vogel, 1905.

⁶ Notzel: Archiv. f. klin. Chir., 60, 141, 1. Heft.

Esmarch bandage. All the animals remained well when the constriction was removed after from one to four hours. Kohlhardt¹⁴ failed to confirm this observation concerning strychnine, but found that an otherwise fatal dose of cocaine hydrochlorate failed to poison rabbits when injected into a limb subjected to constriction longer than one hour.

Bier regards the edema following constriction as of favorable moment, diluting the poison and thus protecting the system from too concentrated a dose. A longer contact with the protective body tissues may render toxic material less harmful.

RESOLVENT ACTION.

Bier believes that hyperemia, both active and passive, is capable of resolving proliferated joint tissue and tendon nodes. He cites his experience with a patient who presented thick, easily palpable and visible nodes on the extensor tendons of the fingers of both hands, following gonorrheal rheumatism. He had been treated in many ways, but never with hyperemia. Hot air was used on one side and a constricting band on the other with disappearance of the nodes. A favorable effect is also mentioned in other cases. The softening of urethral strictures after the use of bougies is ascribed to hyperemia from inflammatory irritation. The passive hyperemia of the genital tract during pregnancy softens vaginal cicatrices. The relief of pain and stiffness in infected joints after active and passive hyperemia is evidence of solvent action.

NOURISHING EFFECT OF HYPEREMIA.

An opportunity to study the effect of long-continued passive hyperemia is afforded by cases of venous thrombosis arising spontaneously in the course of various infections. The condition of the affected limb after such a disturbance has been noted by Berger,¹⁵ Lesage,¹⁶ Eulenberg,¹⁷ Goldscheider,¹⁸ and Redlich.¹⁹ An increase in the size of the muscles of the limb is practically a constant finding. There is usually dilatation of the superficial veins and slight edema. The increase in size of the muscles was unaccompanied by a corresponding increase in strength, and in all but Lesage's case the unaffected limb was the stronger. A true muscular hypertrophy following passive congestion is therefore doubtful.

In the use of passive hyperemia as a therapeutic agent, Bier has never noted any muscular hypertrophy.

An increase in the length of the bones of the extremities after long standing venous hyperemia has been noted by Broca,²⁰ Krause,²¹ Nicoladoni,²² Israel²³ and Hitzig.²⁴ Helferich²⁵ has

utilized passive hyperemia to lengthen a limb shorter than its fellow and with satisfactory result. Schüller²⁶ likewise obtained an increase in the length of extremities after long standing artificial passive hyperemia, but in combination with massage, baths and diet. Animal experimentation and experience in pathology show that after passive hyperemia there is often a marked increase in the connective tissue of an affected organ. Bier regards the number of cases with an increase of bony growth following passive hyperemia as too small to expect much from the method. His own experience in many cases led to no striking results.

REGENERATION.

The proliferation of connective tissue following passive hyperemia may be regarded as evidence of regeneration.

Burn's²⁷ experiments with animals seem to show that bony growth may be increased by passive hyperemia. Artificial fracture of the diaphysis of both tibiae in dogs was followed by more rapid formation of callus in the leg to which a constricting band was applied for an hour and a half a day.

TREATMENT OF SPECIAL CONDITIONS.

Tuberculosis.

Tuberculosis of the joints: Bier believes that active hyperemia is harmful in the treatment of tuberculosis. Passive hyperemia is the method of choice, but does not exclude surgical intervention in cases which are doing badly under this method. Passive hyperemia may be satisfactorily used in out-patient clinics.

Technique: The use of passive hyperemia is especially difficult in tuberculosis and needs close observation on the part of the physician. A strong venous hyperemia is induced by means of the broad elastic band, which must be applied so that it does not cause pain. The limb should remain warm, the pulse plainly palpable in the peripheral parts. The elastic band is allowed to remain in place at first from one to at most three hours. During the application the limb is not immobilized. Both closed and open tuberculosis are thus treated. When there are cold abscesses or fistulae, the strictest asepsis is observed. Collections of pus may be incised and their evacuation favored by cupping glasses or vacuum apparatus. Scraping with the curette and probing must be avoided.

Contra-indications: Beginning amyloid, severe pulmonary phthisis, large cold abscesses and faulty position of the limb are contra-indications to the method.

Results: Bier discusses the results of treatment with passive hyperemia in cases which came under his observation between April 1, 1904, and Aug. 1, 1905. Though the method was in use long before this time, the technique was undeveloped and all cases were not similarly treated. Cases treated after August, 1905, are not included

¹⁴ Kohlhardt: Verhandl. d. deut. Gesell. f. Chir., 1901, ii, Bd., S. 644.

¹⁵ Berger: Deut. Archiv. f. klin. Med., 9 Bd., S. 363.

¹⁶ Lesage: Revue de médecine, 8 Jahre, S. 903, 1888.

¹⁷ Eulenberg: Deut. med. Woch., 1887, S. 175.

¹⁸ Goldscheider: Verhandl. d. 15. Kongr. f. innere Med., 1897.

¹⁹ Redlich: Wiener med. Woch., 1893, S. 1482, 1519 u. 1549.

²⁰ Broca: Des Anévrismes, Paris, 1856.

²¹ Krause: Archiv. f. klin. Chir., 2 Bd., 1862, S. 142.

²² Nicoladoni: Ibid., 18 Bd., S. 252.

²³ Israel: Ibid., 21 Bd., S. 109.

²⁴ Hitzig: Berl. Klin. Woch., 1872, S. 588.

²⁵ Helferich: Archiv. f. Klin. Chir., 36 Bd., S. 873, 1887.

²⁶ Schüller: Berl. Klin. Woch., 1889, Nr. 21 u. 50.

²⁷ Burn: Centralb. f. Chir., 1901, Nr. 47.

to insure a sufficient period of observation. *Tuberculosis of the joints of the hand:* Seventeen cases were under treatment. Four showed fistulae and ulceration at the time of first observation. Abscesses were incised in five cases while under treatment. Fifteen cases (88%) were regarded as cured. The result was satisfactory in all of these; in three there was no limitation of motion. Two cases improved, one had fistula; the other, a severe case, underwent numerous operations. The average duration of treatment was twelve months. *Tuberculosis of the elbow:* Eleven patients were treated. Five had fistulae from the start. In eight, abscesses were incised under observation. Eight patients (72.7%) were cured, two of them fistulous cases. Normal mobility was secured in none of the cases. In all, however, motion was satisfactory. The worst case showed an excursion of from 50 to 115 degrees. Three were improved, all of them fistulous cases. The average duration of treatment was nine months. *Tuberculosis of the foot:* Thirteen patients were treated. Eight had fistulae when they came under observation. Abscesses had to be incised in six. Eight were cured, four of them fistulous. Perfect motion was secured in three, satisfactory motion in all. Three were improved. There was no improvement in one, and in another an amputation was done outside the clinic. The average duration of treatment was ten months. *Tuberculosis of the knee:* Bier regards the knee as less suited for passive hyperemia than other joints with tuberculosis. In most cases an operation is needed to prevent stiffness in a faulty position. In eight cases an operation was done after a short trial of passive hyperemia. In five cases, however, the method was used, and of these two were beginning to show fistulae and a third was already fistulous. Three patients were cured, two with full motion. In one the joint was stiff, but in good position. Two improved, both with stiff joints. *Tuberculosis of the shoulder:* Only one case was treated. In this, cure was complete with perfect motion.

Both Henle²⁴ and Halse²⁵ report favorable results with passive hyperemia in joint tuberculosis. Though the method has been generally thought inefficient and even dangerous, Bier believes that poor results are due to bad technique and that operation is less often necessary than with other methods.

Bier believes passive hyperemia to be an efficient method of treating not only tuberculosis of the joints, but also of the testes, the tendon sheaths, glands, the subcutaneous cellular tissue and the skin.

Acute Inflammation and Suppuration of the Extremities

Technique: In the treatment of gonorrheal inflammations, of acute simple and relapsing osteomyelitis, lymphangitis, freshly infected wounds and phlegmonous inflammation of the tendon sheaths, the technique in the applica-

tion of passive hyperemia is quite different from that in tuberculosis. While in tubercular inflammation, the stasis bandage is applied for only a short daily period and the production of edema is avoided, in these acute non-tubercular infections the elastic band is applied for from twenty to twenty-two hours a day and the limb elevated during the remaining two to four hours to diminish the edema. Similar care is taken in these cases to impede only the venous return. Discomfort should be avoided. The constricted limb should be warm and the pulse strong. Pain should be lessened. Its diminution is a good index of the efficiency of the method. Following the application, there is usually an increase in the redness, swelling and edema of the diseased region. The whole limb, even, may become red to the limits of the bandage, but with the continuance of treatment these symptoms should subside. If abscesses appear they should be incised. As the case improves, the period of application is shortened until finally the bandage is used only from one to several hours a day. During the early part of the treatment, the constricted limb should be carefully watched. The bandage may become loose with time and need to be tightened. On the other hand, a strong blue color to the limb indicates that it has been too tightly applied. The constriction should not be applied too close to the diseased region. When the fingers are affected, it may well be placed on the upper arm. Its site should be frequently changed to avoid injury to the underlying tissue.

If surgical intervention is necessary, the incisions should be small. After operation, the bandage may be re-applied after from two to three hours. The evacuation of pus may be aided by expression and flushing with normal salt solution. A large absorbent dressing favors the evacuation of pus. Drainage and the use of tampons are believed to be harmful, doing unnecessary injury to the diseased region.

Effect on temperature: Though the bandage often fails to affect the temperature, yet, in some cases, it is noted that the temperature quickly falls after its application or sinks to rise again when it is removed.

Gonorrheal Arthritis

Bier has treated all forms of gonorrheal arthritis with his method, obtaining the best results in the most severe cases with stiffness or ankylosis of the affected joints. He knows no method of treatment which accomplishes such rapid results in any disease as hot stasis in gonorrheal arthritis. The prompt relief of pain is one of its most striking features. Often after one hour of application, a point the movement of which was followed by excruciating pain can be passively manipulated without discomfort. Both passive and active motion should be begun as soon as is possible without pain. If as rarely happens pain is not at once relieved, the bandage may be removed for from one half to one hour, then replaced.

²⁴ Henle. *Beitrag zur klin. Chir.* 20 Bd. 711

²⁵ Halse. *Munch. med. Wch.* 1903, Nr. 22

Unfortunately no list of the patients thus treated is included, but Bier illustrates the success of the method by several cases in detail.

Acute Articular Rheumatism.

Of ten cases of acute articular rheumatism, the method gave prompt relief of pain in all. In a disease with such a variable course, positive conclusions cannot be made concerning the effect on its duration, but Bier states that those joints to which passive hyperemia was applied healed more quickly than others in which the method was not used.

Phlegmonous Inflammation of the Tendon Sheaths.

Twenty-two cases were treated. Of these, fourteen recovered without permanent injury to the tendons, an unusually favorable result. The result in eight cases was less fortunate, for in these there was necrosis of the tendons.

Osteomyelitis.

Passive hyperemia is combined with operative interference. Puncture is made with a stout trocar and the abscess washed with normal salt solution or one or more incisions are made. Neither drains nor tampons are advised. In fourteen acute cases, cure was effected in six. There was slight necrosis in five, extensive necrosis in two. Death from pyemia is recorded in one case. The fatal result was not ascribed to the method.

Cephalic and Cervical Inflammation.

Acute suppurative of the middle ear, mastoiditis, acute cerebrospinal meningitis, acute parotitis, lymphadenitis, alveolar abscess, periorbitis and osteomyelitis of the maxilla are regarded as suited for treatment with passive hyperemia. Constriction of the neck is made below the larynx and is maintained for from eighteen to twenty-two hours. The face becomes somewhat swollen and turgid. As a change in the position of the bandage is impossible, the underlying skin must be carefully protected. Relief of symptoms and more rapid resolution of inflammation is claimed.

Recent Literature.

Case Teaching in Medicine: A Series of Graduated Exercises in the Differential Diagnosis, Prognosis and Treatment of Actual Cases of Disease. By RICHARD C. CABOT, A.B., M.D. (Harvard). Instructor in Medicine in the Harvard Medical School and Physician to Out-Patients at the Massachusetts General Hospital. Pp. x. 214. Boston: D. C. Heath & Co., 1906.

In this book Dr. Cabot makes use of the so-called case system of medical teaching which has come into general recognition since Dr. W. B. Cannon's original work on the subject. As an introduction to seventy-eight actual cases Dr. Cabot makes certain pertinent remarks regarding the method, its advantages for the

student, for the teacher, the method of using the cases, general suggestions and a statement of the character of the cases which he has collected. In these remarks there is a succinct statement of what the method is expected to do and has done in the hands of competent teachers. Undoubtedly, the plan of presenting an actual case and bringing out a discussion of it on the part of the students is an interesting and, therefore, a useful method of imparting medical knowledge. The students may always be depended upon to do their part provided the teacher does his. One must, however, be a good teacher in order to accomplish satisfactory results. If the cases are well chosen, as in this volume, and the teacher does not allow the discussion to run too far afield, the method cannot fail to be stimulating and instructive. In preparing this book Dr. Cabot has chosen various cases coming within the domain of internal medicine, some of them simple and some complex. Following the clinical history, which is often intentionally left incomplete, are certain questions, and answers to those questions which are useful after the case has been thoroughly discussed. The book is printed only on the left-hand page making possible note-taking opposite to the case under consideration. The diagnoses are given at the end of the volume. Certain typographical errors occur, as is apt to be the case in a first edition. Among the most conspicuous of these is a misspelling of the word Argyll, in speaking of the Argyll-Robertson pupil. The press work is satisfactory and the volume is furthermore of interest as being the first book of a medical character published by the D. C. Heath Company of Boston.

In the practical use of the case method of medical teaching it should not be forgotten that its application to medicine was due to the efforts of Dr. W. B. Cannon who some years ago saw the possibility of applying to medicine a method long used with success in law. We regret that Dr. Cannon's name is not mentioned in connection with a method which he first showed to be of wide applicability.

A Laboratory Guide in Bacteriology: For the use of Students, Teachers and Practitioners. By PAUL G. HEINEMANN, Sc.B., Fellow in Bacteriology, The University of Chicago.

Although a number of laboratory guides in bacteriology have been issued within the last few years, none can be more heartily commended for actual use in class work than this volume. It is based upon the course in bacteriology given at the University of Chicago. The best technical methods are presented, and they are clearly described. There are good illustrations of nearly all the apparatus employed. Cultural and morphological features of the different bacilli that the student can readily learn by observation are omitted. The book is well arranged with the object of training the student's powers of observation, and of stimulating him to consult the original sources.

eleven other societies are to be here during the month of June alone.

The list of these societies is as follows: The American Medical Association, June 5 to 8, under the presidency of Dr. William J. Mayo, of Rochester, Minn.; The American Academy of Medicine, June 2 and 4, under the presidency of Dr. D. C. Hawley, of Burlington, Vt.; The American Neurological Association, June 4 and 5, under the presidency of Dr. Henry R. Stedman, of Boston; The American Association of Life Insurance Examining Surgeons, under the presidency of Dr. H. W. Dewey, of Tacoma, Wash.; The American Proctologic Society, June 5 and 6, under the presidency of Dr. Lewis H. Adler, Jr., of Philadelphia; The American Urological Association, under the presidency of Dr. F. C. Valentine, of New York; The American Gastro-Enterological Association, under the presidency of Dr. H. W. Bettmann, of Cincinnati, Ohio; The American Medical Editors' Association, June 4 and 5, under the presidency of Dr. H. Waldo Coe, of Portland, Ore.; The American Public Health Association, under the presidency of Dr. F. F. Westbrook, of Minneapolis, Minn.; The National Confederation of State Examining Boards, June 4; The American Association for the Study of Alcohol Inebriety and Other Narcotics, June 5, 6 and 7; and the Massachusetts Medical Society, June 12 and 13, under the presidency of Dr. Arthur T. Cabot, of Boston.

The membership in these various societies naturally coincides in great measure with that of the American Medical Association, hence the opportunity of combining various meetings has no doubt led to this somewhat extraordinary array of societies coming to Boston at this time. It is apparent that this city offers much of interest quite apart from its work in medicine, and it is also evident, from the plans which have been made, that amusement and recreation will form a goodly part of the meetings which are about to take place. This is as it should be. It would be unfortunate were our minds so taken up with purely professional problems that no time could be left for the social side. It would be equally unfortunate were the time to come when these meetings should so far neglect their reason for existence that recreation took a foremost place. There is, however, small danger of this, and the aim of the Boston management has been to combine in just measure, and, we trust, with a measure of success, the strictly scientific side of the program with a due amount of relaxation.

THE FOREIGN GUESTS.

A MEETING of the American Medical Association would be far from complete were it not possible to have the medical profession of other countries represented at its sessions. This year will be no exception to the rule which has previously obtained that many distinguished foreigners will grace the meeting by their presence and their contributions.

Among the first to be mentioned should be Sir William Macewen, regius professor of surgery at the University of Glasgow, and a surgeon of the very foremost rank. Dr. Macewen is now fifty-eight years of age. He was born in a small town in Scotland, studied at Glasgow University, and began his surgical career in a subordinate position at the Glasgow Royal Infirmary. His career has been one of constant accomplishment, and, although he is probably best known for his work on the surgery of the brain and cord, his contributions in general have been of the highest order. His remarks at the meeting will be followed with the closest attention by many who have long known him through his work.

Prof. Alfred Dührssen is a leader among German gynecologists. The scene of his activity has been Berlin where he at present conducts his own polyclinic. He is still a comparatively young man, and will be cordially welcomed to this country by many of the younger generation who have had the good fortune to make his acquaintance as students. Another gynecologist of distinction who will be present at this meeting is Prof. A. von Rosthorn, of Heidelberg, where he has attained to the rank of "Geheimrath." He is a teacher of distinction, a faculty possibly gained in a measure by an earlier association with Billroth. Dermatology is represented by Prof. Max Joseph, of Berlin. Dr. Joseph conducts a popular private polyclinic with an exceedingly large clientèle.

Surgery will have further representation through the presence of Prof. Friedrich Trendelenburg, of Leipsic, and Dr. Theodore Tuffier, of Paris. Professor Trendelenburg is at present chief of the surgical clinic at the University of Leipsic and is perhaps popularly known best through his contribution to surgery in calling attention to the so-called "Trendelenburg posture." Dr. Tuffier is a leader among French surgeons. He was an ardent supporter of Lister's early theories and did much toward introducing antiseptic methods into French practice. His recent work on spinal anesthesia has more recently brought him again into prominence.

Dr. Tullier is, however, more than a surgeon, inasmuch as he is a patron of the arts and a collector of great enthusiasm. Prof. Max von Frey will represent physiology. He is at present professor of physiology at the University of Würzburg. He was formerly an assistant of Ludwig and later was associated with Justus Gaule.

Others who will attend the meetings are Dr. Wesley A. Mills, of McGill University, Dr. James Bell, Dr. George A. Peters, Dr. Alexander Primrose, Dr. George A. Armstrong, Dr. Francis J. Shepherd and Dr. Richard A. Reeve, all from Canada, and the latter president of the British Medical Association. British Columbia and New Brunswick will also be represented in the persons of Dr. Samuel W. Tunstall, of Vancouver, and Dr. Murray MacLaren, of St. John's.

THE NERVOUS SYSTEM IN RELATION TO DIABETES.

At the recent meeting of the Section of Medicine of the Fifteenth International Congress at Lisbon Dr. F. W. Pavy, of Guy's Hospital, London, contributed an important paper on the pathogeny of diabetes. After discussing at considerable length the pathological anatomy and what is known of the mechanism of sugar production, he committed himself definitely to a recognition of the important part which the nervous system plays in the development of the disease. He holds that the evidence from various sides is now too definite to admit of doubt that cerebral action is intimately related to the affection. The common occurrence of diabetes in so-called neuro-pathic persons and its greater severity among those of this disposition are arguments of some value in this direction.

The mechanism by which this influence of the nervous system is affected is presumably through the little understood vaso-motor system of nerves. Dr. Pavy is of the opinion that the chain of evidence regarding the part played by the vaso-motor system is sufficient to render possible the assumption that diabetes is primarily a neurosis implicating a particular area of that system.

However forcible the arguments Dr. Pavy presents may appear to the general reader, we may at least see in his work a valuable tendency to associate closely organs and processes which at first glance seem to have small relation to each other. As we observe the gradual development of our knowledge of disease, we see more and more an

effort to make clear the exact relationship of the nervous system to the most varied disorders under investigation. No doubt this tendency, like any other, may be carried to an extreme, but the recognition of the influence of the nervous system on bodily function is a distinct step in progress. As we have before had occasion to state, one of the strongest arguments for the prosecution of specialism in the practical as well as in the theoretical branches of medicine is the impetus it gives to look below the surface and to trace relationships which would otherwise pass wholly unobserved. The entire matter, in its broadest aspects, of the relation of the nervous system to the onset of disease, constitutes a subject which the students of immunity must sooner or later face, and which no doubt when systematically studied will lead to practical results of value. Such a paper as this of Dr. Pavy is a step in this direction.

THE AMERICAN MEDICAL ASSOCIATION SUPPLEMENT.

As a supplement to this issue of the Journal, we publish details of the management of the several committees acting under the general committee of arrangements. In order to make clear the entire organization of the committee of arrangements we reproduce a diagram illustrating in graphic form the exact relationship of the various subordinate committees to the central committee of arrangements and to each other. It is hoped hereby to offer the visiting members of the association a quick and easy method of securing such information as they may need regarding those in authority in the various departments of the general organization. This is naturally not intended in any way to take the place of the various bureaus of information but rather to aid in directing members to the proper sources of authority.

MEDICAL NOTES.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON.

For the week ending at noon, May 30, 1906, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 12, scarlatina 29, typhoid fever 13, measles 67, tuberculosis 27, smallpox 0.

The death rate of the reported deaths for the week ending May 30, 1906, was 19.28.

BOSTON MORTALITY STATISTICS. — The total number of deaths reported to the Board of Health for the week ending Saturday, May 26, 1906, was 214, against 202 the corresponding week of last year, showing an increase of 12 deaths and making the death-rate for the week 18.75. Of this number 97 were males and 117 were females; 205 were white and 9 colored; 141 were born in the United States, 67 in foreign countries and 6 unknown; 45 were of American parentage, 147 of foreign parentage and 22 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 51 cases and 4 deaths; scarlatina, 40 cases and 2 deaths; typhoid fever, 13 cases and 2 deaths; measles, 80 cases and 1 death; tuberculosis, 47 cases and 26 deaths; smallpox, 2 cases and no deaths. The deaths from pneumonia were 28, whooping cough 4, heart disease 27, bronchitis 8 and marasmus 4. There were 15 deaths from violent causes. The number of children who died under one year was 41; the number under five years 60. The number of persons who died over sixty years of age was 54. The deaths in public institutions were 57.

There were no cases and no deaths reported from cerebrospinal meningitis during the week.

AMERICAN NEUROLOGICAL ASSOCIATION. — The annual dinner of the American Neurological Association will be held Monday evening, June 4, at the Hotel Somerset, presided over by Dr. Henry R. Stedman, of Boston.

LUNCHEON, AMERICAN GASTRO-ENTEROLOGICAL ASSOCIATION. — Dr. E. G. Cutler will entertain the American Gastro-Enterological Association at luncheon at the University Club on Monday, June 4.

DINNER IN HONOR OF FOREIGN GUESTS. — The foreign guests of the American Medical Association will be entertained at dinner at the Hotel Brunswick, Monday evening, June 4. Preceding the dinner, a reception will be held between the hours of seven and eight.

BREAKFAST TO PROF. MAX JOSEPH. — On Tuesday, June 5, Dr. C. G. Cumston will entertain at breakfast Prof. Max Joseph, of Berlin, who will speak in the sections on cutaneous medicine and surgery and on hygiene and sanitary science.

FIELD DAY, BOSTON CITY HOSPITAL. — The annual field day of the Boston City Hospital will be held Saturday, June 9, at half past two,

at the Riverside Recreation Grounds. In case of rain the festivities will be postponed to Monday, June 11.

RECEPTION AT THE BOSTON CITY HOSPITAL. — The trustees of the Boston City Hospital have invited the general and section officers and foreign guests of the American Medical Association to visit the hospital June 7, from twelve to one o'clock, to meet his Honor Mayor John F. Fitzgerald and the trustees of the hospital. Luncheon will be served at one o'clock.

NEW ENGLAND MEMBERS OF HOUSE OF DELEGATES, AMERICAN MEDICAL ASSOCIATION. — The members of the House of Delegates of the six New England States are as follows: Maine, Dr. E. M. Fuller, Bath; New Hampshire, Dr. J. W. Gile, Hanover, and Dr. W. T. Smith, Hanover; Vermont, Dr. M. R. Crane, Rutland; Massachusetts, Dr. L. H. Fitz, Dr. E. H. Bradford, Boston, Dr. J. L. Hildreth, Cambridge, W. P. Bowers, Clinton, Dr. F. G. Wheatley, North Abington; Rhode Island, Dr. John Champlin, Westerly; Connecticut, Dr. George R. Shepherd, Hartford, and Dr. Henry L. Hammond, Killingly.

NEW YORK.

NEW YORK BAY POLLUTION BILL. — The New York Bay Pollution Bill has now been signed by Governor Higgins, as well as Mayor McClellan, and therefore the creation of the new commission is an assured fact. The bill goes into effect immediately.

RETIREMENT OF A POLICE SURGEON. — In consequence of failing health, Dr. Stephen Guernsey Cook, for twenty years a police surgeon and for a considerable portion of that time president of the Board of Police Surgeons, has handed in his application for retirement. The city ordinances provide that after fifteen years' service a police surgeon may retire on half pay, which is \$1,500 a year.

A NEW DEPARTMENT AT COLUMBIA UNIVERSITY. — Miss Adelaide Nutting, at present superintendent of nurses at the Johns Hopkins Hospital, Baltimore, and also president of the American Federation of Nurses, has been selected to inaugurate at Columbia University a department for the training of women to take charge of public and private institutions.

RED CROSS HOSPITAL. — The corner stone of the New York Red Cross Hospital, on Central Park West, was laid on May 22, with public ceremonies. William T. Wardwell, president of the institution, purchased the lot, 100 by 90

feet, on which the building is to stand, at a cost of \$90,000, and he has also contributed another \$10,000, making his total gifts to the hospital \$100,000.

AMENDMENT TO CHILD LABOR LAW.—Governor Higgins has signed an important amendment to the child labor law, protecting children from the dangers of night work. This amendment provides that no minors under sixteen years of age shall be employed in factories or mercantile establishments after 7 P.M.

DISPOSAL OF GARBAGE.—In consequence of the burning of the plant, on Barren Island, of the Sanitary Utilization Company, which for some time past has been disposing of the city's garbage under contract, it becomes necessary for the Street Cleaning Department temporarily to have the garbage again towed out to sea in scows and dumped. Before the company took the contract and erected its plant the summer resorts along the New York and New Jersey coasts suffered greatly from the garbage and refuse washed up upon the beaches. It is stated, however, that the scows will now be taken so far out to sea that there will be no danger of a recurrence of this nuisance. The Street Cleaning Commissioner, Dr. Woodbury, had an interview with Admirals Evans and Brownson of the Navy, and both officers assured him that, from their knowledge of the tides, they felt justified in saying that if the garbage were dumped twenty miles at sea, southeast of the Goshue channel, there would be no possibility of defilement of the beaches.

Correspondence.

A FURTHER NOTE ON A NEW METHOD OF USING THE ROENTGEN RAYS: THE CONSIDERATION OF PRIMARY TREATMENT OF SOME EARLY CASES OF BREAST CANCER BY THESE RAYS.

Boston, May 21, 1906.

Mr. Editor: It is universally acknowledged that the most important step towards an intelligent use of the x-rays as a therapeutic agent is the ability to give a definite dosage. This may be done both as regards quantity and quality of the rays by means of the fluorometer devised by me in connection with a series of *fluorometer plates* and described elsewhere.*

I have found this method helpful in treating tubercular adenitis, tubercular sinusitis, enlarged prostate, cancer of the breast, lymphosarcoma, etc. The therapy of the one case of schirous carcinoma, reported by me, is the subject of the present, the microscopical examination of which is

death (from other causes) showed that the diseased cells had disappeared. Other cases of cancer of the breast have done well by the use of this method when the clinical diagnosis indicated operation, which had been declined. A testicle in a man about fifty years old, which was much enlarged owing to a new growth, was reduced to smaller size than normal under treatment by this method.

The noteworthy point in these cases is that though the exposure has sometimes been one and one-half hours in duration with the tube at a distance of ten inches from the skin, not even the slightest reddening of the surface has been caused, because the easily absorbed rays were excluded by the aluminum plates. In other words, by means of this method the penetrating rays, which also have efficiency as a therapeutic agent, can be used in much larger doses than would be possible were the easily absorbed rays not shut out. Formerly the amount of penetrating rays that could be used was dependent upon the quantity of easily absorbed rays that the skin could bear without being burned.

The rays of great penetrating power, estimated by their action upon barium-platinum-cyanide, exert less chemical action than those of low penetrating power. This is true also, I believe, of their action on a photographic plate, therefore if the efficiency of the rays as a therapeutic agent is due to the chemical change they bring about, a somewhat larger amount of highly penetrating rays may be used, as compared with that necessary for easily absorbed rays in superficial cases, to offset this lower degree of chemical action, in addition to the larger amount needed, because the light diminishes when the distance from the source increases. It follows from this that the amount of easily absorbed rays and of penetrating rays issuing from a tube cannot be measured accurately by the same scale if based on a chemical reaction, therefore many of the methods used are at fault.

While the small group of patients with cancer of the breast alluded to above does not prove that the x-rays are the best means of treating very early cases, it does seem wise to give further consideration to their use as a primary means of treatment in early new growths of the breast, when we realize, first, that the penetrating rays undoubtedly have efficiency as a therapeutic agent, second, that we can use them alone by excluding the easily absorbed rays and that if the dose can be measured, and third, that metastases may perhaps be avoided by very early treatment. The rays should be directed upon the breast from two or more sides and those regions also should be included in the treatment in which the glands that might be affected were the disease to progress. Subjecting the heart and other normal organs to the action of the rays should be avoided. I believe that there are cases of early new growths in the breast which may well be treated by the x-rays alone, provided the method which I have indicated is fully carried out. Further study of the subject is of course necessary. The fact that in numerous cases of operation for breast cancer the x-rays have been successful only locally is not a proof that they may not be used successfully as a primary treatment in some early cases, in these numerous, perhaps have died already, I think, of metastases. With operation we find the metastases and recurrences locally. If in some cases, specifically, the x-rays used very early can be of the character mentioned, in some sort of the disease the will be a greater cure than they are now.

Very truly yours,

LESLIE H. WILLIAMS, M.D.

Casa de la Salud, Mexico.

Mr. Editor: Dr. David W. Williams, of Boston, has been successful in the treatment of cancer of the breast by the use of the x-rays. He reports that he has treated a number of cases, which he had previously failed to cure by operation, by the use of the x-rays. He states that he has been successful in curing a number of cases of cancer of the breast, which he had previously failed to cure by operation. He states that he has been successful in curing a number of cases of cancer of the breast, which he had previously failed to cure by operation.

Mr. Editor: I have been reading Dr. Williams' paper on the use of the x-rays in the treatment of cancer of the breast, and I am very much interested in the results. I have been successful in curing a number of cases of cancer of the breast, which he had previously failed to cure by operation.

Very truly yours,

LESLIE H. WILLIAMS, M.D.

*Meeting of the Suffolk District Branch, held in connection with the Boston Medical Library, December 7, 1905. Boston Medical Library, January, 1906, p. 200.

*The x-rays in Medicine. System of Medicine, Vol. 1, 1st Edition, 1905, p. 176-179, 512, 513.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, MAY 12, 1906.

| CITIES. | Reported deaths in each. | Deaths under five years. | CITIES. | Reported deaths in each. | Deaths under five years. |
|------------------------|-----------------------------|-----------------------------|-----------------------|-----------------------------|-----------------------------|
| New York | 1,437 | 446 | Quincy | 7 | — |
| Chicago | 583 | 161 | Waltham | 7 | — |
| Philadelphia | — | — | Gloicester | 11 | — |
| St. Louis | — | — | Pittsfield | 8 | 1 |
| Baltimore | 197 | 46 | Brookline | 4 | — |
| Cleveland | — | — | North Adams | 4 | — |
| Buffalo | — | — | Chicago | 7 | 6 |
| Pittsburg | — | — | Northampton | 9 | 2 |
| Cincinnati | — | — | Medford | 6 | — |
| Milwaukee | — | — | Beverly | 3 | — |
| Washington | — | — | Hyde Park | 3 | 1 |
| Providence | 78 | 24 | Newburyport | 8 | 0 |
| Boston | 226 | 79 | Leominster | 3 | 1 |
| Worcester | 37 | 12 | Melrose | 5 | — |
| Fall River | 29 | 13 | Woburn | 5 | — |
| Cambridge | 30 | 8 | Marlborough | 4 | 0 |
| Lowell | 53 | 16 | Westfield | 1 | — |
| Lynn | 17 | 4 | Peabody | 1 | — |
| New Bedford | 14 | 4 | Revere | 1 | — |
| Springfield | 25 | 4 | Clinton | 6 | 1 |
| Lawrence | 26 | 11 | Attleboro | 1 | 0 |
| Somerville | 15 | 3 | Adams | — | — |
| Holyoke | 20 | 5 | Gardner | 2 | 1 |
| Brookton | 10 | 3 | Milford | — | — |
| Malden | 11 | 2 | Weymouth | 1 | 0 |
| Salem | 17 | 2 | Frammingham | 3 | 2 |
| Chelsea | 7 | 4 | Watertown | 2 | 0 |
| Haverhill | 8 | 1 | Plymouth | — | — |
| Newton | 1 | — | Southbridge | — | — |
| Fitchburg | 1 | — | Wakefield | 1 | — |
| Taunton | 10 | 6 | Webster | — | — |
| Everett | 6 | 2 | | | |

REGISTRATION.

BOSTON MEMBERS OF THE AMERICAN MEDICAL ASSOCIATION.

IMPORTANT NOTICE.

The Bureau of Registration at Mechanics Hall will be open Monday morning, June 4, at 8.30 A.M. Boston members are urged to register at the earliest possible moment, in order to avoid congestion which will otherwise occur on Tuesday.

Committee of Arrangements,
R. B. GREENOUGH, Secretary.

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING MAY 23, 1906.

BAIHACHE, P. H., surgeon. Granted leave of absence for one month from June 9, 1906. May 21, 1906.

STONER, G. W., surgeon. Granted leave of absence for three days under paragraph 189 of the regulations.

STONER, G. W., surgeon. Directed to proceed to Liverpool, England, and other points in Continental Europe for special temporary duty, upon completion of which to rejoin his station at Ellis Island, N. Y. May 16, 1906.

MCINTOSH, W. P., surgeon. Granted leave of absence for ten days from May 25, 1906. May 22, 1906.

BROWN, B. W., passed assistant surgeon. Granted leave of absence for two months from July 2, 1906. May 16, 1906.

RODMAN, J. C., acting assistant surgeon. Granted leave of absence for five days from May 29, 1906. May 22, 1906.

TOWNSEND, P., acting assistant surgeon. Granted leave of absence for five days from May 22, 1906. May 22, 1906.

WELDON, W. A., acting assistant surgeon. Granted leave of absence for thirty days from July 15, 1906. May 19, 1906.

BOARD CONVENED.

A board of medical officers was convened to meet at Baltimore, Md., on May 19, 1906, for the purpose of making a physical examination of an officer of the Revenue-Cutter Service. Detail for the Board: Surgeon L. L. Williams, chairman, Assistant Surgeon W. H. Frost, recorder.

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING MAY 26, 1906.

H. D. WILSON, surgeon. Detached from the Naval Hospital, Portsmouth, N. H., and ordered to the "Dixie."

J. P. TRAYNOR, passed assistant surgeon. Ordered to the Naval Hospital, Portsmouth, N. H., for additional duty.

A. H. ALLEN, assistant surgeon. Ordered to the Naval Hospital, Naval Home, Philadelphia, Pa.

(Orders issued by the Commander-in-Chief of Asiatic Station.)

J. M. EDGAR, surgeon. Detached from the "Monadnock" and ordered home.

F. S. NASH, surgeon. Detached from the "Rainbow" and ordered to the "Monadnock."

EXAMINATION.

EXAMINATION FOR APPOINTMENT IN THE MEDICAL CORPS OF THE ARMY.—A preliminary examination of applicants for appointment in the Medical Corps of the Army will be held at various military posts throughout the United States on July 31, 1906. Full information in regard thereto may be obtained from the Surgeon General of the Army, and applications must be filed prior to June 30. Thirty years is the prescribed maximum age, and persons whose age exceeds that limit are not eligible for examination.

RECENT DEATHS.

DR. WALLACE CLEVELAND CLARK, of New York, died on May 19. He was graduated from the medical department of the University of the City of New York in 1882.

DR. JOSEPH SIDNEY CRANE, of New York, died on May 20, in the eighty-fifth year of his age. He was a native of Massachusetts, and was graduated from the medical department of the University of Pennsylvania in 1844. Before the Civil War he practised in Columbia, S. C.

BOOKS AND PAMPHLETS RECEIVED.

Materia Medica and Therapeutics. An Introduction to the Rational Treatment of Disease. By J. Mitchell Bruce, M.A., LL.D. (Hon.) Aberd., M.D. Lond. New and enlarged edition. Revised throughout. Chicago: W. T. Keener & Co. 1906.

Transactions of the National Association of United States Pension Examining Surgeons. Fourth Annual Meeting, Chicago, Ill., July 7 and 8, 1905. Vol. III.

The Practical Medicine Series. Comprising Ten Volumes on the Year's Progress in Medicine and Surgery. Under the General Editorial Charge of Gustavus P. Head, M.D. Vols. I and II. Series 1906. Chicago: The Year Book Publishers.

The Nature and Treatment of Cancer. (Some Methods of Hypodermic Medication in the Treatment of Inoperable Cancer.) By John A. Shaw-Mackenzie, M.D., Lond. Third edition, revised and enlarged. London: Baillière, Tindall & Cox. 1906.

Manual of Diseases of the Ear, Nose and Throat. By John Johnson Kyle, B.S., M.D. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1906.

The Autotoxicoes. Their Theory, Pathology and Treatment. By Heinrich Stern, Ph.D., M.D. Chicago: G. P. Engelhard & Co. 1906.

Transactions of the American Roentgen Ray Society. Pittsburg, Pa. 1906.

On Leprosy and Fish-Eating. A Statement of Facts and Explanations. By Jonathan Hutchinson, F.R.S. and F.R.C.S., LL.D., Glasgow, Edinburgh, Cambridge and Oxford; D.Sc. Leeds and Hon. M.D. Dublin. Illustrated. London: Archibald Constable & Co., Ltd. Chicago: W. T. Keener & Co. 1906.

On Carbohydrate Metabolism (A Course of Advanced Lectures in Physiology delivered at the University of London, May, 1905). With an Appendix on the Assimilation of Carbohydrate into Protein and Fat followed by the Fundamental Principles, and the Treatment, of Diabetes Diabetically Discussed. By F. W. Pavy, M.D., LL.D., F.R.S., Illustrated. London: J. & A. Churchill. Philadelphia: P. Blakiston's Son & Co. 1906.

An Essay on the General Principles of the Treatment of Spinal Curvatures. By Heather Bigg, F.R.C.S. Ed. Illustrated. London: J. & A. Churchill. Philadelphia: P. Blakiston's Son & Co. 1905.

The Subconscious. By Joseph Jastrow. Boston and New York: Houghton, Mifflin & Co. 1906.

Wissenschaftliche Mitteilungen aus Bad Kreuznach. Den Ärzten überreicht von der städtischen Kur-Kommission. 1906.

Original Articles.

THE ORIGIN AND NATURE OF THE BLOOD PLATES.

BY JAMES HOMER WRIGHT, M.D., Sc.D.

Director of the Pathological Laboratory of the Massachusetts General Hospital; Instructor in Pathology, Harvard University Medical School.

A prolonged study of the comparative morphology of the blood corpuscles of a wide range of animals has shown me that all of the many theories hitherto proposed concerning the origin and nature of the blood plates are untenable and erroneous.

In this paper I shall not set forth my reasons for coming to this conclusion, but I shall confine myself to a brief statement of my own opinions concerning the origin and nature of these bodies and a summary of the facts and observations upon which my opinions are based.

By means of a staining fluid, devised by me for use in the staining of blood films according to the method of Leishman, which gives the so-called Romanovsky polychrome staining, I have been enabled to stain characteristically the blood plates in sections of fixed tissues and organs so that they may be positively recognized and may be clearly distinguished from other histological elements. The description of the method of obtaining suitably stained sections with this fluid is reserved for a later publication.

After an extensive study of sections of bone marrow and other tissues in which the blood plates are thus characteristically stained, I have convinced myself that the blood plates are detached portions of the cytoplasm of those giant cells of the bone marrow and spleen which have been named "megakaryocytes" by Howell to distinguish them from the multinucleated giant cells of the marrow — the so-called osteoclasts or polykaryocytes (Howell).

This idea of the origin and nature of the blood plates is based upon the following observations:

In the sections, the blood plates (Figs. 7, 11 and 12) present the following characteristics. They appear as small bodies of generally circular outline, of a variable diameter but usually less than that of an erythrocyte, a striking characteristic is the presence in the central part of each plate of an aggregation of more or less closely packed, minute, red to violet-stained granules which may be so closely packed together and so deeply stained as to form an opaque, homogeneous, sharply outlined mass giving an appearance suggestive of a nucleus. In this central portion of the plates of some animals small rounded, unstained, vacuole-like areas are often present. The marginal portion of the blood plate is translucent, blue-stained and, though sometimes having a smooth edge, it usually presents at the periphery indentations and short projections of irregular shape giving the edge an irregular or

jagged or fimbriate outline. There is thus to be distinguished in the blood plate two portions, namely, a central, granular, red to violet-staining portion and a marginal, homogeneous, hyaline, blue-staining portion. The diameter of the central portion and the width of the marginal portion vary, the latter being usually narrower than the diameter of the former.

The giant cells present the following peculiarities which are of importance for the subject of this paper:

The cytoplasm making up the central and usually the greater portion of the giant cell is crowded more or less densely with closely set, minute, red to violet granules, for the most part like those of the central portions of the blood plates, while at the periphery it is hyaline and blue-stained. This hyaline peripheral portion forms a definite narrow zone of somewhat variable width, but is very narrow as compared with the diameter of the whole cell and has a smooth or finely ragged or fimbriate edge. In appearance it suggests the ectosare of an amoeba. The majority of the giant cells are of spheroidal form, but a minority are of varied and irregular shape by reason of the distortion of their cytoplasm into processes and pseudopod-like prolongations of varying length, form and width, so that they present all the varieties of form and outline shown by a motile amoeba (Figs. 1, 2, 6, 10 and 13).

Some giant cells may be observed in which nearly all of the cytoplasm is in form of pseudopod-like processes extending peripherally in various planes from a small central mass of cytoplasm surrounding the nucleus (Figs. 1 and 14). In these distorted giant cells the central red to violet granular portion of the cytoplasm is continued into the pseudopod-like processes to form in them a central portion and the peripheral, hyaline, blue, marginal zone also continues on to these processes as a hyaline marginal zone with a smooth or finely ragged, or fimbriate free edge (Figs. 1, 2, 4, 6, 10, 13 and 14). These pseudopods of the giant cells may have in some instances a greater length than the diameter of the field of an oil immersion objective. Their width is never less than the diameter of the smaller blood plates. They may be seen sometimes projecting far into the lumen of a blood vessel through its imperfect wall (Figs. 4, 6, 10 and 13). Some of them are seen unconnected with any giant cells (Figs. 3, 5, 7, 8, 9, 11 and 12) and such free pseudopods have been found not only in the blood channels of the marrow and spleen but also in the capillaries of the lungs.

A comparison of the pseudopods, especially the slender ones, with the blood plates shows the most striking similarity in composition and structure (Figs. 5, 7, 8, 11 and 12). The material constituting the granular, red to violet-stained central portion of both the granular, red to violet-stained central portion of the plates is indistinguishable in general appearance. It is also contained in small rounded or rounded vacuole-like spaces like those seen in the central portions of the plates (Figs. 5, 7, 11 and 14). The hyaline

A Rapid Method for the Differential Staining of Blood Films and Malarial Parasites, by James Homer Wright, M.D., *J. Am. Med. Research*, vol. vi, p. 136, January, 1917.
Pathological Technique, by MacGill and Wright, 3rd edition, p. 370. Saunders, Philadelphia, 1914.

marginal zone of the pseudopod is also just like the marginal hyaline portion of the plate in texture, staining, width, and outline of its edge.

Moreover, in a few pseudopods, of a width corresponding to the diameter of the blood plates, one or more short lengths of the central, red, granular portion may be seen to be marked off by constrictions or to be definitely separated and to appear as rounded masses or segments of the same diameter and with the same appearances as the central portions of the blood plates (Figs. 1, 2, 3, 4, 5, 7, 8, 9, 10, 11, 12 and 14). Such separate, rounded masses thus are completely surrounded by the hyaline material constituting the marginal zone of the pseudopod and the appearances are thus produced of a typical blood plate with its hyaline marginal portion continuous with the hyaline marginal portion of the pseudopod; or of a pseudopod formed out of a short chain of blood plates by the continuity of their marginal portions.

Furthermore, there may be observed short bud-like pseudopods springing, either directly from giant cells or from other pseudopods, with rounded, central, granular portions, either separate from, or continuous with, the central granular portion of the main mass of cytoplasm (Fig. 13). The smaller of these bud-like pseudopods are also in every respect like blood plates, except that they are obviously a part of the cytoplasm of a giant cell.

In brief, the two constituents of the cytoplasm of the pseudopods and of the bud-like processes of the giant cells are identical with the two substances making up the blood plates in staining reaction and texture and they are similar in their arrangement with reference to each other. Furthermore, all grades of transition exist between bud-like processes of giant cells in process of detachment (Fig. 13), or slender pseudopods showing signs of dividing into smaller parts by transverse division and the blood plates (Figs. 1, 2, 3, 4, 5, 7, 8, 10, 11, 12 and 14).

In view of these facts the inference seems to be justified that the blood plates are detached portions of the cytoplasm of the giant cells. This idea derives additional support from the following considerations:

1. That the giant cells do lose their cytoplasm. This is shown by the relatively small amount of cytoplasm of some of the giant cells exhibiting amoeboid forms, and by the occurrence of degenerate looking-giant cell nuclei with little or no cytoplasm connected with them (Fig. 4.) The appearances seem to clearly indicate that this loss of cytoplasm occurs chiefly by the detachment of buds or plate-like fragments or segments from pseudopods, or of whole pseudopods, rather than by disintegration and liquefaction, evidence of which may be seen in some giant cells.

2. The number of giant cells and pseudopods in which the appearance of plate formation is present is only a small proportion of the whole number of giant cells and is not greater than could be expected at any given moment in view of the numbers of the blood plates.

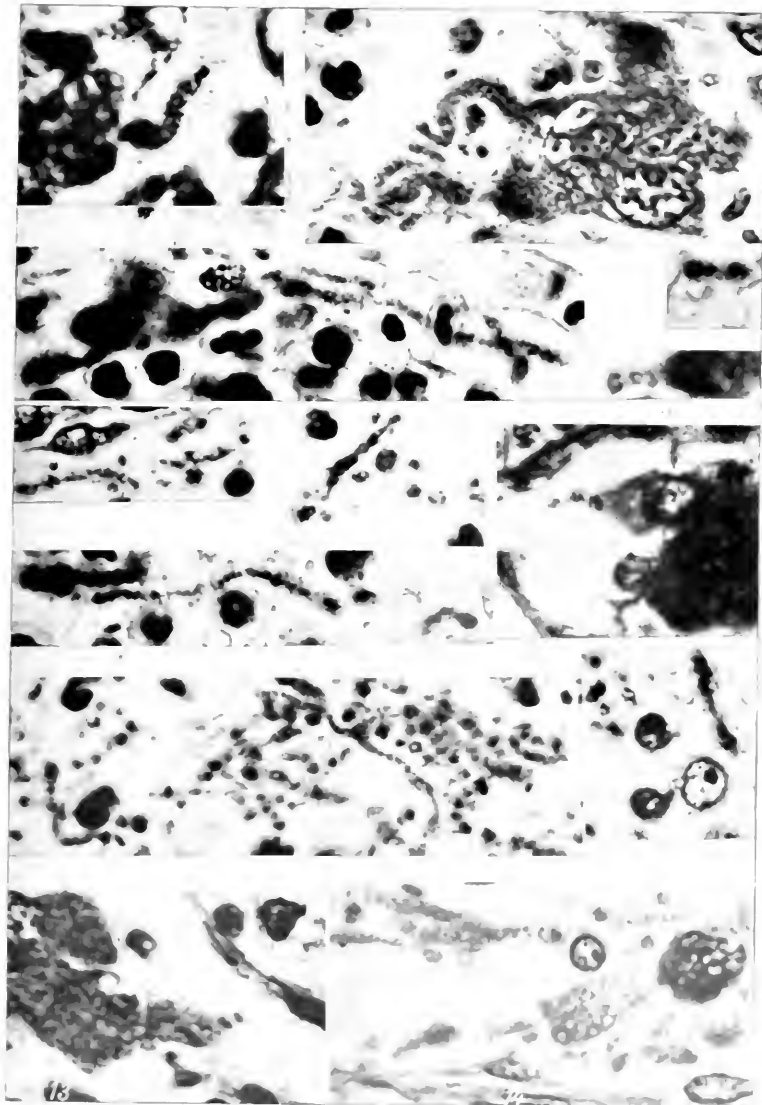
3. The direct observation by me of protoplasmic movements of identical character, both in the hyaline marginal zone of the giant cells and in the hyaline marginal zone of the blood plates on the warm stage of the microscope. These movements have been described by Detjeen and others for blood plates. I have seen the hyaline marginal zone of the giant cells and of the blood plates constantly changing its outline, sending out and withdrawing short processes of various shapes. The so-called amoeboid movement of the blood plates is not surprising, because it is known that detached fragments of living protoplasm may exhibit independent movement.

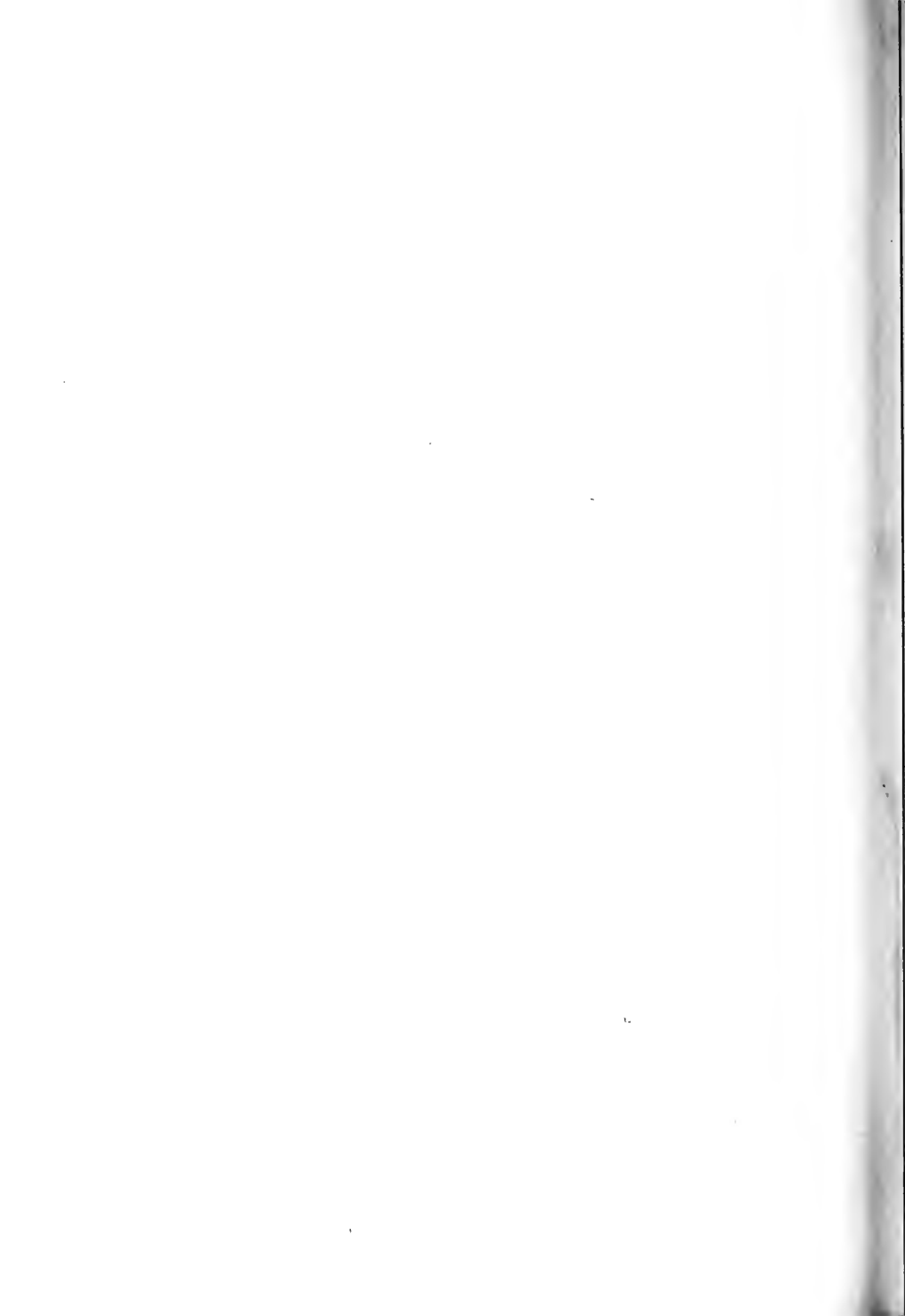
In this connection I may state that I have seen a few giant cells change their form very markedly, sending out and withdrawing pseudopods, such as are seen in the sections. This seems to show that the presence of pseudopods and protoplasmic prolongations of giant cells and even of whole giant cells in blood vessels, as I have seen in the sections, is not a passive act, due to local conditions of pressure in the tissue, but is a manifestation of the vital activity of the giant cell.

4. According to my own and others' observations, bodies that are undoubtedly and obviously blood plates are found only in the blood of mammals, and mammals are the only creatures that have giant cells in the blood-forming organs. I have found undoubtedly, characteristically staining blood plates in the blood of all of a considerable variety of mammals including the opossum and camel, and I have found giant cells in the blood-forming organs in all mammals, including the opossum, in which I have sought for them. The so-called spindle cells or fusiform corpuscles of the birds, amphibia, reptiles and fishes have been claimed by some writers to be the morphological equivalents of blood plates, but my studies of the blood of these vertebrates have not led me to accept this view.

5. It would seem from my own observations and from the studies of others that the blood plates make their first appearance in embryonic mammalian blood at about that stage of development when the giant cells have first appeared in the blood-forming organs. This point, however, is not as definitely established as I could wish.

6. A comparison of the results of the enumeration of blood plates, obtained by Helber and by Pratt in certain pathological conditions, with the histological findings in the bone marrow in the same diseases suggests a relationship between the blood plates and the giant cells. Thus in pernicious anemia and lymphatic leukemia the blood has been repeatedly found to contain abnormally few plates, while the marrow in typical cases of this disease, as far as can be inferred from the reports in medical literature and from my own observations, undergoes profound changes in the character of its cellular constituents with resulting very marked diminution in the number of the giant cells. On the other hand, in post-hemorrhagic anemia, the blood





plates are increased in number and there is also increase in the amount of red marrow with good evidence that the number of giant cells in the blood forming organs are relatively and absolutely increased in number.

In so-called myelogenous leukemia the blood plates are also increased in number and in the cellular accumulations of this disease giant cells do not seem to be an uncommon finding, although but little attention has been paid to them by pathologists. In view of the enormous increase in the marrow elements in this disease it must be obvious that the presence among them of a relatively small proportion of giant cells means a great absolute increase in the number of such cells in the body.

My acknowledgments are due to Dr. Oscar Richardson, assistant pathologist, for relieving me of much of the regular work of the laboratory during the period in which I have carried on this study.

DESCRIPTION OF PLATE.

The photomicrographs were made by Mr. L. S. Brown in the Pathological Laboratory of the Massachusetts General Hospital from sections of the bone marrow, spleen and lung of the rat, the blood plates of which animal are especially large. The magnification in all the figures is approximately 1500 diameters.

Fig. 1. Giant cell with a pseudopod projecting into a small blood channel of the bone marrow. A blood plate in process of pinching off is seen at the free extremity of the pseudopod. The granular portion of the cytoplasm is densely stained. The hyaline margin of the pseudopod is only faintly shown.

Fig. 2. Giant cell with a pseudopod projecting into a blood channel of the bone marrow. Other pseudopods either free or attached to the cell are also shown. Two small rounded bodies near the pseudopods in the vessel are either blood plates or cross sections of pseudopods.

Fig. 3. Detached pseudopod in a capillary of the lung in process of segmentation into blood plates.

Fig. 4. A small pseudopod segmenting into plates and still attached to a nearly naked giant cell nucleus in a blood vessel of the spleen.

Fig. 5. Blood plates and detached pseudopods in a blood vessel in the spleen.

Fig. 6. A giant cell with pseudopods, two of which stretch far into a small blood channel of the marrow. The continuity of one of them is not visible in the figure.

Fig. 7. Blood plates and a detached pseudopod in process of segmenting into blood plates. The vacuole-like unstained areas in the central portions of the pseudopods and of the plates are shown. Two leucocytes are present.

Fig. 8. Detached pseudopods showing segmentation and transitions to blood plates. These lie in a small blood vessel of the marrow.

Fig. 9. Small detached pseudopod showing indications of segmentation in a lung capillary.

Fig. 10. Giant cell in the marrow with pseudo-

pod protruding into a blood vessel through its thin wall. The free portion of the pseudopod has segmented so as to form a short chain of three blood plates connected together by their hyaline marginal portions.

Fig. 11. Thrombus-like mass of blood plates in a vessel of the marrow. Among the plates two detached pseudopods, one of which shows signs of beginning segmentation. Vacuole-like unstained areas are seen in some of the blood plates and in one of the pseudopods.

Fig. 12. A detached pseudopod, several blood plates, a few erythrocytes and three leucocytes in a blood vessel of the spleen. The hyaline marginal zone, both of the pseudopod and of some of the plates, is fairly well shown.

Fig. 13. A giant cell of the spleen with a pseudopod projecting into the lumen of a small blood vessel through its wall. At the free extremity of the pseudopod two plates are seen in process of formation.

Fig. 14. Giant cell in a blood vessel of the spleen with its cytoplasm nearly all arranged in pseudopods and more or less detached from the nucleus. Some blood plates are seen either free or in continuity with the pseudopods. Vacuole-like unstained areas are shown in the mass of cytoplasm at the left of the nucleus.

INFLAMMATION OF THE FRONTAL SINUS.*

By HAROLD PEYTON MOORE, M.D., BOSTON.

HEADACHE is a symptom which in a great many instances receives the most off-hand diagnosis as to its cause and the most off-hand treatment. The case is much like that of the crying baby and the soothing syrup. There is a sure remedy always at hand. It is on every dressing table and on the show case by every soda fountain. We are taught that cause and effect always go together and so should be studied together. In the common symptom of headache, however, the effect often engrosses our attention to the exclusion of the cause. It is a truism, of course, but one which I shall take the liberty of repeating, that an illuminating diagnosis of the cause of recurring and chronic headache requires a most thorough, sustained and systematic physical examination plus a keen cross examination of the patient's personal and family history and a judicial weighing of the testimony thus secured. This means that the broad knowledge and sound good sense of the general practitioner must at times be supplemented by the examinations of the man doing special work, and it means that both should work together, and that the specialist in medicine like the specialist in finance should try to keep out of "fads and fancies."

The subject of this paper is acute and chronic inflammation of the frontal sinuses. The chief symptom of disease of the frontal sinuses is headache. I ask your permission to make what I have to say a little informal and in the line of a lecture.

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Charts and specimens from the Anatomical Laboratory, City of Harvard Medical School.

stration. I shall discuss the subject in the following order: The development and the anatomy of the frontal sinus; the surgical routes to the frontal sinus; acute inflammation of the frontal sinus, its diagnosis and treatment; chronic inflammation, its diagnosis and treatment.

The frontal sinus is one of a chain of accessory cavities which surround the nasal cavity and enlarge its capacity. All the sinuses are formed in the same way. The nasal mucous membrane possesses the peculiar ability of growing in various directions into cartilage and into bone and there expanding to make the cavities which we know as the sinuses. The antrum alone is present at birth. The formation of the other sinuses begins soon after birth, but active growth does not take place in them until the period of second dentition. The reason for their formation is a little problematical. The best explanation for their presence is that they serve to lighten the bones of the face. The reason that they increase in size at the time of the second dentition is that they do so in order to give the permanent teeth enough room. At this time the superior maxilla enlarges and with it the antrum. The frontal sinus enlarges in order to keep the symmetry of the face. This theory accounts nicely for the enlargement of the antrum and the frontal but is not so applicable to the sphenoid. In animals all the sinuses including the sphenoid contain turbinates covered with olfactory epithelium. This is seen beautifully in the dog. There are no turbinates and no olfactory epithelium in the sinuses of man.

There are two frontal sinuses, a right and a left. They are separated by a median partition which corresponds to the sagittal suture of the skull. The sinuses are placed in the middle and inferior part of the front face of the frontal bone. All recent studies demonstrate that the sinuses are anterior ethmoid cells which have grown upward from the ethmoid region and separated the two plates of the frontal bone. There is always an intimate relation between the frontal sinuses and the ethmoid region since one is but the continuation of the other.

SIZE.

The development of the sinus begins after birth. At eight years it extends above the root of the nasal bone one quarter of an inch. The adult sinus measures vertically from three fourths of an inch to an inch, and horizontally from the median line one inch, that is, it reaches to the middle of the upper rim of the orbit. The capacity of the adult sinus is about one dram and a half. Owing to deviation of the septum between the sinuses the two are seldom of the same size. The prominence of the superciliary ridge is but a poor guide to the size of the sinus.

VESSELS.

The veins of the sinus are in relation with the superior longitudinal sinus of the brain, and the lymphatics connect with the sub-arachnoid space. There is a plentiful supply of nerves which makes the sinus very sensitive.

THE FORM OF THE SINUS.

There are two varieties of the frontal sinus,—the small sinus and the large.

THE SMALL SINUS.

The small frontal sinus is one where the ethmoidal cell which makes it has developed but little, but, instead, has remained at the top of the ethmoid labyrinth as the highest ethmoid cell, without pushing further upward and separating the two layers of the frontal bone. Such a sinus is contained within the upper inner angle of the orbit just above and a little behind the inner canthus of the eye.

THE LARGE SINUS.

What may be taken as the normal sinus is one which comes out of the orbit on to the brow. Normally in the median line the height varies between three quarters of an inch and an inch. In large sinuses the vertical measurement may be two inches.

The large sinus is often still further enlarged by prolongations,—a prolongation outward over the superciliary ridge and a prolongation backward over the orbit.

THE OUTWARD PROLONGATION.

Usually the sinus extends outward from the median line one inch, that is, to the middle of the orbit. Where there is a large outward prolongation the outward limit may be two inches, from the median line, or the malar bone.

THE BACKWARD PROLONGATION.

The backward prolongation runs back over the orbit on the inner side of the sinus to end blindly about one-half inch from the rim of the orbit. Usually it is one eighth of an inch high.

THE SEPTUM OF THE SINUS.

Normally the septum of the sinus is a thin triangular plate of bone placed vertically between the two sinuses. Very rarely are there perforations in it. I have found but one undoubted perforation in at least four hundred heads. No matter how much the upper part of the septum may deviate the base is nearly always in the median line.

INCOMPLETE OR PARTIAL SEPTA.

In addition to the median septum which is complete, the frontal sinus often has partial or incomplete septa. These have two seats of predilection,—at the summit of the sinus and in the backward or the orbital prolongation. Partial partitions are found in about 10% of all sinuses. In about 5% of cases there is found a nearly complete partition. I have never seen but one of these at a time. Such a partition must be recognized or it will vitiate the operation which is undertaken for the cure of disease of the sinus.

The study of the relations of the sinus is the study of the sides which compose it. There are three such sides and the canal which connects the sinus with the nose.

ANTERIOR WALL.

Taking bodies as they run in the dissecting room in one third of them, the frontal sinus is of the undeveloped variety; that is, it does not come on to the brow at all but is confined within the upper inner angle of the orbit as the highest ethmoid cell. For surgical purposes such a sinus has no anterior wall. In two thirds of the cases the sinus comes on to the brow from three fourths to one inch. If, therefore, you do not know the size of the sinus, the only sure place to reach it is within the orbit at its upper inner angle, and next to this place you are sure to find the sinus at the root of the corresponding nasal bone.

THE POSTERIOR OR THE CRANIAL WALL.

The posterior wall of the sinus is the front wall of the cranial cavity.

THE FLOOR OF THE FRONTAL SINUS.

In surgical anatomy, next to the anterior wall the floor of the sinus is the most important wall. Given a normal sinus of the large variety the floor is in relation from without inward with the roof of the orbit, the roof of the ethmoid labyrinth and the roof of the nasal fossa.

The relationship with the roof of the ethmoid labyrinth is constant. If the sinus is small the relationship with the roof of the orbit and with the roof of the nasal fossa may disappear.

The relationship between the floor of the frontal sinus and the ethmoid cells is very important. The anterior ethmoid cells make the floor of the sinus, and often mould into it. By this they may obstruct the drainage of the sinus. When an ethmoid cell moulds into the floor of the sinus it is easy to break through the roof of this and make a large opening down into the ethmoid region of the nose. The floor of the frontal sinus is either funnel shaped or saucer shaped.

The dangerous area of the sinus is the posterior internal angle of the floor, since here the cribiform plate comes into close relationship. All strong curetting of the sinus, therefore, should be done in an outward and downward direction, never backward and inward.

The sinus empties into the middle meatus of the nose by a canal about half an inch long. This starts from the posterior part of the floor from an eighth to a quarter of an inch from the median septum. In trying to find it from within the sinus, the tendency is to tug the septum of the sinus. If the floor of the sinus is funnel shaped the probe is guided at once into the duct, but if the floor is of the saucer shape variety the probe must be moved outward away from the septum before it will drop into the duct.

CATHETERIZING THE SINUS.

The duct of the sinus empties into the middle meatus to the outside of the anterior end of the middle turbinate. It is usually impossible to

catheterize the sinus without first gaining room by the removal of the anterior end of the middle turbinate. Not only does the turbinate hinder catheterization but any enlargement of it tends to block the canal. All intranasal work for the purpose of bettering the drainage of the frontal sinus is focussed about the anterior end of the middle turbinate. The frontal sinus is placed directly over the antrum so that in one half of the cases a probe can be passed from the frontal sinus into the antrum below. Pus, of course, could find its way more readily than the probe. From its anatomical position, therefore, the antrum is often only a cesspool for the frontal.

THE PULLEY OF THE SUPERIOR OBLIQUE MUSCLE.

The superior oblique muscle is attached just within the upper inner angle of the orbit to the inside of the supra-orbital notch. This muscle lies in wait for the operator in all operations on the sinus within the orbit. If it is disturbed it gives temporary double vision, and occasionally permanent trouble. It is attached to the periosteum of the orbit. If it is necessary, this can be elevated carefully without giving lasting inconvenience, but the pulley of the muscle will not tolerate rough dissection.

THE MUCOUS MEMBRANE.

The mucous membrane of the frontal sinus is a continuation of the mucous membrane of the nose, but is not as thick. This difference is due to the fact that the mucous membrane of the sinus has few glands and no cavernous tissue.

I have given the anatomy somewhat in detail because the surgery of the sinus has undergone complete revolution in the last few years owing to the increased knowledge of the surgical anatomy.

THE METHODS OF ENTERING THE SINUS.

1. In a fair proportion of cases, after removing the anterior end of the middle turbinate, a catheter, can be passed into the sinus. This may follow the canal, but in the majority of instances it enters an ethmoid cell which moulds into the floor of the sinus and breaks through the roof of this into the cavity of the sinus. To pass a larger instrument than a catheter into the sinus by this route is to my mind unsurgical, because it is working in the dark.

2. Where the sinus comes on to the brow, it can be entered just above the root of the corresponding nasal bone. The nearer the nasal bone the opening is made the greater the resulting deformity from pitting of the scar.

3. The third method of entering the sinus is from the upper inner angle of the orbit. The incision for this starts from the inner end of the eyebrow and runs down the side of the nose along its outer border. The linear scar which this leaves is, of course visible, whereas the scar of the second method is confined to the eyebrow and is hidden by it unless it is sunken. This third method of entering the sinus is very valuable because it enables the operator to remove the

inner part of the floor of the sinus thus making a large opening from the sinus into the nose and at the same time to deal with any or all of the ethmoid cells. Chronic disease of the frontal is practically always associated with chronic disease of the ethmoid region, and the two have to be dealt with at the same time.

X-RAY PLATES.

X-ray plates give very valuable information in dealing with sinus disease. The first thing which must be known in operating on the sinus is its location and size. In other words whether the sinus is of the small type and confined within the orbit or whether it is of the usual large type and comes on to the brow. The plates show this and show further how far above the root of the nasal bone the sinus can be entered without opening the cranial cavity. If it is possible to enter well above the root of the nasal bone the deformity which results from pitting of the scar is reduced to a minimum and at times entirely obviated.

The plates show further how many septa the sinus has and their position, they show the presence and size of the orbital prolongation, the extent of the basal relationship between the floor of the sinus and the ethmoid cells, and so settle the question of the possibility of making a large opening from the sinus into the nose; and finally the plates will in a majority of cases show the presence of pus. In settling these points transillumination is unreliable.

ACUTE INFLAMMATION OF THE FRONTAL SINUS.

Acute inflammation of the frontal sinus is very common after a cold or the coryza of influenza. The bacillus of influenza has been demonstrated in acute and chronic inflammation of the antrum so that it is highly probable that the same would be true of the frontal in disease of sinus could we get at it as readily as we can the antrum. Acute inflammation of the frontal sinus does not as a rule go on to the formation of pus. The conditions in the sinus are probably the same as the conditions in the nose, namely, congestion and edema of the lining mucous membrane with an exudation of serum and a blocking of the drainage duct. These conditions persist for a few days or for a few weeks. Complete resolution generally follows.

Symptoms.—The symptoms may be simply a feeling of weight and uneasiness over the brow, something like the feeling in the temporal region when the Eustachian tube is closed; or, in addition, there may be dull persistent pain which is increased on lowering the head and tenderness under the upper inner angle of the orbit. Anything more than a very transient edema over the brow or over the inner part of the upper lid indicates that pus is forming. A few cases have been reported where the upper lid has dropped from involvement of the third nerve. I have had no such case.

Diagnosis.—In making the diagnosis of acute inflammation of the frontal sinus supra-orbital

neuralgia must be ruled out. Occasionally, the two conditions cannot be separated with certainty. In neuralgia the tenderness usually extends up on the brow in the course of the nerve to the scalp, and there is a history of neuralgia in other branches of the fifth nerve or in other parts of the body. In the nervous neuralgia patient, one should be slow in operating, especially should be slow in resorting to any external operation. In all cases of sinus disease, sometimes in acute cases, but always in chronic cases, syphilis is the "nigger in the wood pile." In my house-office days, it used to be said that every negro should be treated first for syphilis. In acute inflammation of the frontal sinus due to syphilis, if the history does not give the clew, the increase of the pain at night may furnish it.

Treatment.—The frontal sinus must be made to drain. This can be done in many cases by the use every three hours of a spray of adrenalin oil. Unless the patient has an idiosyncrasy to this drug it will keep the middle turbinate in a shrunken condition and make the lower opening of the duct as patent as possible. In addition it is very useful to pack the middle meatus with cotton saturated with the oil hoping that by leaving the tampon in place a short time the astringent effect of the drug will penetrate further along the course of the duct, perhaps into the sinus itself. If the middle meatus is roomy enough air, preferably warm, can be blown into the sinus; this gives great relief.

Combined with the use of adrenalin or rather preceding its use the nose should be cleansed with warm normal salt solution from a Birmingham douche. Cold or heat applied to the brow over the sinus will dull the pain. In the beginning of the trouble, pnenacetin, bromide, or morphia are required for the severer paroxysms. Unless this line of treatment lessens the symptoms in a short time the anterior end of the middle turbinate should be removed.

The theory of this is, that it allows the sinus to drain. In acute cases it is only rarely that pus flows from the sinus after this is done, but the clinical fact remains that this procedure quickly brings improvement. Often it is the only thing which will. If the acute inflammation does not resolve but passes into the tedious course of chronic suppuration of the sinus, if you have taken off the anterior end of the middle turbinate early you have the satisfaction, such as it is, that you left no stone unturned which might have prevented the disease from becoming chronic.

CHRONIC SUPPURATION OF THE FRONTAL SINUS.

Chronic suppuration of the frontal sinus gives a much darker picture than the one given by acute inflammation of the sinus. Acute inflammation may be an affair of a few days and a trivial complaint; chronic suppuration, on the contrary, is an affair of months, years or a lifetime and can never be classed as trivial. Its tedious course and the increasing invalidism which it produces gain for it a dignified standing among diseases.

There has been a great revival of interest in chronic suppuration of the frontal sinus of late owing to the trying out of certain new operations for its cure. For many years disease of the frontal sinus has masqueraded as supra-orbital neuralgia. For many years also, pus which had broken into the orbit from the frontal sinus was classified as orbital abscess. If any part of the nose or its accessory cavities was assigned as the origin of the pus it was the ethmoid region. In many cases this was true, but in many more cases the unrecognized source of the pus was the frontal sinus.

We have operations enough and to spare for dealing with suppuration of the frontal sinus; just what ones can be spared for good will be settled in the near future. Our knowledge of the etiology of chronic suppuration of the frontal sinus is not in this prosperous condition. More knowledge along this line is needed sadly. All that we know is this: The serum poured out in acute inflammation of the sinus may not absorb but become infected by the ordinary pus producing bacteria. The pus infects the mucous membrane so that in certain places the mucous membrane becomes thicker and in other places not only thickens but becomes polypoid. If the duct is sufficiently plugged, the pus seeks an outlet by way of the brow or by way of the orbit. Cultures of the pus secured at operation from my cases were either sterile or full of unrecognizable detritus. In three of my cases the report read: "No tubercle bacilli, no bacilli of influenza, the meningococcus not present." In a case of one of my colleagues the report came back, "A pure culture of the pneumococcus." I feel that someday the tubercle bacillus will be found to play a part here as elsewhere in the body. Tuberculosis and syphilis are the two great systemic diseases which claim every region of the body. One of the things longest known and best known about the etiology of sinus disease is that syphilis causes it in many cases. It is a striking fact that disease of the bony walls of the sinus is rarely found. I know of but two instances. A sequestrum is practically never found unless trauma was the starting point of the suppuration. Recent work goes to show that the periosteum is not involved any oftener than any of the other layers of the mucous membrane.

The other layers of the mucous membrane may be extensively changed so that the sinus is filled with polypi and yet the periosteum show but little if any alteration. This would seem to rule out periostitis as a cause except in cases of syphilis and to confine the seat of the disease to the mucous membrane, and make the probable cause some infection of the mucous membrane.

Symptoms.—The chief symptom is brow pain over the affected sinus. The pain may be neuralgic, but generally it is of a dull, heavy, throbbing character. At first it may be intermittent but later it becomes practically constant. Usually there is pus in the nose, but it may be absent until catheterization of the sinus is successful. Along with the pain there are gastric symptoms

One case of mine had persistent gastralgia, another had for months morning nausea for some days before her period and was constantly uncertain as to whether or not she was pregnant. In severe cases dizziness is present. Trouble with the vision of the eye of the affected side often is a very early symptom and sends the patient to the oculist.

I have found that cases of chronic suppuration of the frontal sinus are divided into two distinct groups:

1. A group where the chief features are the eye symptoms.

2. A group where the prominent features are pain and nasal discharge. The first group of cases come first to the eye clinic; the second as a rule come first to the throat and nose clinic.

First group. The characteristic of this group is exophthalmos or ethmoid tumor or both. The exophthalmos is due to pus gaining the orbit by perforating the floor of the sinus and displacing the globe of the eye. The ethmoid tumor is due to pus coming into the orbit by perforating the lacrymal bone. Ethmoid tumor is seen as a rounded swelling just above the inner canthus of the eye. In half of the cases of the first group there is no pus in the nose. Pain is not prominent.

Second group. In the second group there may be edema of the inner half of the upper eyelid but no ethmoid tumor or exophthalmos; instead pus and polypi are usually present in the nose and there is very marked pain.

Diagnosis. Where there is ethmoid tumor or exophthalmos if the x-ray plates do not locate the disease in the frontal sinus only exploratory operation will rule out the various new growths of the orbit, or affections of the tear sac. Pus in the nose would point to the frontal sinus or to the ethmoid region or antrum. Where there is brow pain and pus in the nose with tenderness under the upper inner angle of the orbit and edema of the upper lid or of the brow plus gastric disturbance or perhaps dizziness the diagnosis is practically certain. It can be made positive by the x-ray or by getting into the sinus from the middle meatus and withdrawing pus through the catheter or along the catheter. Pain giving by suppuration in the antrum is occasionally located over the brow. The pain given by inflammation of the frontal sinus is occasionally in the occipital region as well as in the frontal.

Treatment. Only a very few cases of chronic suppuration in the frontal sinus can be cured by passing a catheter from the nose into the sinus and irrigating with astrigent or anti-septic solutions. This method is tedious in the extreme and unreliable. To attempt to enlarge the duct of the sinus from below and to insert a tube to be retained in the duct is dangerous, because you are working in the dark. All methods like these two leave out of account the extensive disease of the mucous membrane of the sinus. No wash can irrigate the sinus thoroughly if it is half full of polypi or is divided into recesses by septa. An operation to have any chance of success must

thoroughly eradicate the mucous membrane and the polypi and remove all the septa. An opening into the sinus should be made large enough to accomplish this. This means in a small sinus that the whole front wall must be removed, and in a large sinus the greater part of the front wall or occasionally the whole of it. When this fundamental step has been taken the methods of finishing the operation open to the operator are as follows: First, he can enlarge the opening of the sinus into the nose; second, he can let the duct alone, except to clean it of diseased mucous membrane and polypi, and pack the cavity of the sinus through the brow incision until it heals by granulations, and is obliterated; in the third place, after the frontal sinus has been opened well above the orbital margin and the diseased mucous membrane, the polypi and the septa removed, the operator can make an opening along the side of the nose and resect the ascending process of the superior maxilla, thus exposing the ethmoid labyrinth from the front. By working from the ethmoid region upward and from within the sinus downward, the internal part of the floor of the sinus can be removed and a larger opening made into the nose than it is possible to make in any other way. If there is extensive disease of the ethmoid region, the tear sac is pushed aside and part of the inner wall of the orbit taken out so that the whole ethmoid region can be curetted. Not only the ethmoid region can be thoroughly dealt with in this way, but this is the most direct route to the sphenoidal sinus.

No one operation is suitable for all cases. It requires judgment to fit the operation to the case. The ideal operation is to open the sinus through an incision in the eye brow which is hidden by the eye brow later, to open well up on the forehead and to enlarge the opening sufficiently to clean out the mucous membrane and polypi and septa and then to make a large opening down into the nose. This method will occasionally succeed. The trouble with it, however, is that the duct tends to close and give a return of all the symptoms. If an attempt is made to keep the duct open by a tube passed through it into the nose just as soon as the tube is taken out the granulations caused by the irritation of the tube shut off the duct again. Temporary packing of the duct with gauze is even worse. Unless the anatomical structure of the sinus allows the making of a sufficiently large enough opening into the nose so that granulations will not bridge across the duct and close it, the operation just described will do nothing more than relieve the surgical indications for the moment. Even if the major surgical symptoms do not return, the discharge into the nose may continue. From the standpoint of the specialist no case of sinus disease is classed as cured if there is any considerable amount of pus in the nose. As this operation leaves no deformity, and does not interfere with other procedures if they become necessary, it is often the operation of first choice. By this operation I had the satisfaction of curing a physician who wished

of all things to avoid a scar and did not care if he had to wash out his sinus himself at intervals. When he last reported, some six months ago, there was no discharge. By this method also I operated on both sinuses of a boy of seventeen. The sinuses were very large. By a little intranasal work the openings which were made into the nose were easily kept open. The boy reports for washing of the sinuses periodically. The discharge is decreasing, the boy is comfortable. The deformity which would have been caused by the granulating method of treating these sinuses would make the boy an object of comment among his companions.

THE METHOD OF OBLITERATING THE SINUS BY GRANULATIONS.

The bone cavity left after a mastoid operation is allowed to heal from the bottom by granulations. When healing is complete the cavity is obliterated and in proportion to the original size of the cavity there is pitting or sinking of the scar. The great advantage of this method when applied to the frontal as well as to the mastoid is that the cavity operated upon is obliterated; the disadvantage is the sinking of the scar. A sunken scar back of the ear is noticed but little; a similar scar is very conspicuous on the brow. A sunken scar, however, is often a moderate price to pay for a cure of chronic suppuration of the frontal sinus. The injection of paraffin will better the scar to a certain extent. The granulating method is simple. It is done as follows:

Enough of the front wall of the sinuses is removed to allow the mucous membrane to be thoroughly cleaned from every part of the sinus. Great care is taken on this point. The mucous membrane is removed from the duct of the sinus but the duct is not enlarged as the object is to obliterate it. After the sinus is cleaned a part of the incision is left open and the sinus packed with gauze. Some men report sinus obliterated in this way in six weeks. In my experience the time has been between eight weeks and four months. This prolonged packing is tedious. Great care is necessary that parts of the sinus do not catch across and form pockets instead of closing steadily from the bottom. If this occurs the pain returns. In a large sinus the sinking of the scar often produces marked deformity. This method leaves behind it the satisfactory feeling that the sinus is obliterated and out of the way forever.

The third method of treating chronic suppuration of the frontal sinus is the most radical. It is a strong rival of the granulating method. It is a combination of two operations requiring one skin incision and two bone incisions. A wide strip of bone is left along the rim of the orbit and at the root of the nasal bone. This bridge makes it possible to take off the whole of the anterior wall of a large sinus and yet have very little if any deformity afterwards. The skin incision runs through the middle of the whole

length of the eyebrow and then down the middle of the side of the nasal bone. The first bone incision is in the brow well above the root of the nasal bone, so that a good bridge of bone is left after the second bone incision is finished. The second bone incision is made at the outer border of the nasal bone. Through this the ascending process of the superior maxilla is resected. Through these two bone incisions the inner angle of the floor of the frontal sinus can be thoroughly removed. In the seven cases which I have done in the last year, I have proved to my own satisfaction that in a small sinus there is absolutely no deformity and in a large sinus very little, — less deformity in the large sinuses than after the granulating method. By the Killian method, as this third method is called, not only the inner angle of the floor of the sinus is taken away, making as large an opening into the nose as the sinus will possibly allow, but the ethmoid cells are opened from the front and can be cleaned out more thoroughly than by any other route.

This operation requires more skill than the other operations because the pulley of the superior oblique must be avoided and the lachrymal sac must be turned from its bed without injury and the bridge at the root of the nose be preserved at all costs. Three fourths of the incision is in the eyebrow and so is hidden by it. All that is visible is a half-inch linear scar along the outer border of the nasal bone. It is a long operation to do, but the healing is short. The whole incision is closed and firmly healed in a week. It is a great relief after the tediousness of the granulating method. As the whole ethmoid region can be cleared out and the inner part of the floor of the sinus taken away so that the sinus is left as the dome of the nasal fossa, it would seem as if operative procedures could go but little if any further. So far I have gotten better results with this method than with any other. The last case but one where I used this method contrasts the method of Killian and the granulating method very strongly. About a year ago, I attempted to obliterate a large left frontal sinus and packed it at intervals, which were never longer than three days, for eleven months. A sinus running well back over orbit in the deep orbital prolongation of the sinus persisted until the patient was thoroughly tired. I was equally so. About a month ago I reoperated this case by the Killian method. Healing was complete in a week, there has been no drawback, and there is practically no pus in the nose. The relief of ending this dragging case was very great.

In the cases of chronic suppuration which have exophthalmos or ethmoid tumor, nature attempts to do this operation for herself. In two such cases I found the inner angle of the floor of the sinus necrosed away as well as the greater part of the anterior half of the inner wall of the orbit. All that was left for me to do was to clear out the ethmoid cells and to leave a bridge at the root of the nasal bone.

SUMMARY.

The x-ray plate is the only means of telling whether the frontal sinus remains in the orbit as an undeveloped ethmoid cell or whether it comes on to the brow. The x-ray in very many cases will show whether the sinus contains pus. Acute inflammation of the frontal sinus responds readily to treatment. In any except the most trivial of the acute cases the removal of the anterior end of the middle turbinate produces more benefit than any other form of treatment. In chronic suppuration of the frontal sinus syphilis should be ruled out at the start. With the exception of syphilis and trauma, very little is known of the etiology of chronic suppuration of the frontal sinus. The mucous membrane is the seat of the disease as the bony walls of the sinus are rarely involved. The prognosis is increasing invalidism from pain, from gastric disturbances and dizziness and inability to use the eye. Occasionally in neglected cases the pus will necrose its way into the cranial cavity, but as a rule it breaks into the orbit or into the nose. Thus, suppuration of the frontal sinus is not as dangerous as suppuration of the mastoid. But curiously enough when the meninges are exposed to pus in the region of the frontal the liability of fatal infection is much greater than when the same thing happens in the mastoid.

The three chief symptoms of chronic suppuration of the frontal sinus are interference with sight, pus in the nose, and chronic frontal headache. The pain may, however, be in the occipital region. Treating suppuration of the frontal sinus by catheter through the nose into the sinus is only palliative, seldom curative. The rational method of treatment is to open the sinus through an incision in the eyebrow and to see what the conditions are within it. Then remove all the mucous membrane, polypi and septa, and make as large an opening into the nose as possible and maintain this by intranasal work. This method will cure in a certain number of cases. If it does not cure it does not interfere with other procedures. It will always give relief to stormy symptoms. The granulating method is long but more successful than the method just described. The granulating method would seem to be best suited to sinuses of moderate size. In these it gives little or no deformity. The same thing is true, however, of Killian's method. This does away with a small sinus as completely as the granulating method; but in another way, it turns the sinus into a widely open recess of the nose. A granulated sinus can reinfect and then everything has to be done all over again. If trouble follows the Killian operation there is a good prospect of dealing with it through the nose. In all cases where there is exophthalmos or orbital tumor it is wasting time to use any operation except that of Killian because nature has partly done this operation for you. In all cases where there is a very large sinus with many septa and marked evidence of ethmoiditis the combined ethmoid and frontal operation or the operation of Killian is the operation of choice.

It is useless to expect a cure of suppuration in the antrum when there is disease of the frontal sinus above which is dropping pus into the antrum. Many uncured cases of antral disease are due to this cause. The x-ray plate is very valuable in clearing up these cases.

THE TESTIMONY OF THE FATHERS.

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THE machinery of life has become so complicated and the rumble of it so fills the air that vital fundamental issues are many times obscured. We are deceived on the one hand as to the precise nature of the basic principles involved, and distracted from their proper application on the other. So deeply concerned are we with the superficial questions which impede our progress through the world that the real problems are neglected. I have seen a bear so worried by thorns in a thicket that the continued pursuit of his quarry no further interested him. There is nothing so difficult of suppression or so rapidly contagious as the right. Any effort to stifle its expression or limit its sphere of action but reacts upon the forces which seek to compass its undoing.

If we will but carefully scrutinize and intelligently interpret history, we may easily find ample argument and precedent for almost any righteous act. Arguments and precedents founded upon fundamental principles are not poorly conceived make-shift remedies for the various ills, real or fancied, which we intermittently believe beset every department of human activity. The fathers saw more clearly because their training was more simple and direct; they judged more correctly because life was less complex, and, therefore, the causes for distraction fewer. And we need not always penetrate very far the shades of the past to mold aright our views and draw sound conclusions. If, then, we undertake to approach temperately and inspect with sagacity some of the problems which through earlier misdirected effort have returned to us for re-solution, let us review a few expressions of opinion from gentlemen eminent in their profession, and distinguished for their sense of justice, catholicity and mental grasp of basic facts.

I quote, therefore, in this connection largely from "An Ethical Symposium," G. P. Putnam's Sons, 1883, to which Alfred C. Post, William S. Ely, S. Oakley Vanderpoel, Lewis S. Pilcher, Thomas Hun, William C. Wey, John Ordronaux, Daniel B. St. John Roosa, Cornelius R. Agnew, Abraham Jacobi and H. R. Hopkins were illustrious contributors.

Twenty-four years ago William S. Ely, M.D., wrote: "There is no difference between physicians but such as results from their personal talents, medical acquirements or their experience. . . . The pursuit of truth, justice and humanity are alone enjoined and each individual is to determine whither that pursuit shall lead him.

"Between those who believe in the creation of the world by cataclysms and those who believe in orderly evolution there is as wide a difference as between sugar pills and castor oil. Yet I never heard of one body of scientific men refusing to sit down and compare views of creation with the other."

At the same period Lewis S. Pilcher, M.D., wrote: "Any remarks upon the nobility of the profession of medicine would be trite; it claims for itself, and the willing tribute of others accords to it, the pre-eminence among the callings that men give themselves to, for the devotion to humanity, the high courage in the face of danger, the self sacrifice for the relief of others, the public spirit, the liberality of views and the general culture which the duties, the studies and the influences of the profession tend to develop, and which its members as a class display.

"A physician is not a member of a guild or corporation, the rules of which he must comply with in order to retain his membership therein and to enjoy its benefits, but a member of a liberal profession, the rules of which are the unwritten law of humanity and the special requirements of which must vary much according to the peculiarities of his environment."

Thomas Hun, M.D., expressed himself almost a quarter of a century ago with reference to this subject as follows:

"Dr. Austin Flint, Sr., who seems to have studied carefully the whole question and who has published in the *New York Medical Journal* an admirable commentary on the code of medical ethics, says in the April number, 1883, page 372: 'The objectionable point of the code is that which makes a practice based on an exclusive dogma' the ground of a refusal to meet practitioners in consultation. This is not a valid objection. Any physician has a right either to originate or adopt an exclusive dogma, however irrational or absurd it may be."

On page 373: "Opinions held by members of the regular profession, however at variance with those generally entertained, and however absurd, may fairly give rise to criticism and ridicule, but they cannot be made occasions for professional discipline.

"It is pleasant to find one's views coinciding with those of one who has carefully considered the whole subject, and who has brought to its study distinguished ability and high personal and professional character. When we remember that Dr. Flint is a prominent leader of a party in the profession, to most of whom these liberal and just views must be extremely distasteful, we cannot but admire his candor and fairness. The views he has presented are eminently sound and commend themselves to the judgment of those who understand the conditions which underlie all scientific progress, to wit: the largest toleration and freedom of discussion. Under their influence new truths are brought out and examined and errors eliminated, for error is most dangerous when driven into obscurity. No man or body of men can lay claim to absolute truth;

the wisest are no more than seekers after truth. There can be in medicine no heresy because there is no orthodoxy.

"If the principle I have, in accordance with the views of Dr. Flint, endeavored to establish in the beginning of this paper, namely, that those who have received a medical education are entitled to recognition by the profession, irrespective of their doctrines and systems, is sound, then this exclusion of the educated homeopaths, because their practice is based on an exclusive dogma, is illogical. Toleration, if it means anything, means toleration of error, and I do not see how to draw the line which shall limit this principle. To me homeopathy is so false in its statements and assertions, so unsound in its reasoning and extravagantly absurd in the therapeutic agencies on which it relies, as to put a great strain on my power of toleration; yet, even in an extreme case like this, it is unwise to violate by any act of exclusion this great principle lying at the foundation of scientific discussion and of search after truth.

"But there is, according to Dr. Flint, still a disqualifying cause which should exclude homeopaths from consultation, and this is the assumption of a name and organization distinct from and opposed to the regular profession."

"There is undoubtedly force in this objection, but if we look back at the history of the rise and growth of homeopathy in this country the objection will be weakened, if not invalidated. Surely the doctor is old enough to remember the persistent efforts made in the beginning by the homeopaths, when as yet they had no organization, to be admitted into our county medical societies, or in the case of members of the societies who adopted homeopathy to resist expulsion. The numerous suits unsuccessfully brought before the courts to compel the societies to admit or retain them sufficiently attest that if they now have a distinct organization the fault is not on their side. We thrust them out-of-doors, and now it comes with a bad grace from us to give as a reason for refusing fellowship with them that they are not in our house. Here the regular profession lost its great opportunity. If, instead of rejecting those among the applicants who had received a medical education, we had taken them into our ranks notwithstanding their adoption of an exclusive dogma and unsound therapeutic doctrines, we should have avoided for ourselves much embarrassment and mortification, and the career of homeopathy in this country would have been very different. It is plain that this objection now made by Dr. Flint to their recognition was not at that time a valid reason for their exclusion, for it was created by that very exclusion. They were excluded on the charge of 'having their practice on an exclusive dogma' which we now, in accordance with Dr. Flint, maintain to be not valid, and consequently their exclusion was a blunder of the regular profession. This blunder drove them into a separate organization, and this now constitutes a great objection to their recognition, and, as I understand Dr.

Flint, the only objection, provided they have received a medical education. Shall we, then, by persisting in the blunder which has driven them into a separate organization, which is itself, as Dr. Flint has pointed out, the only valid objection to their recognition, perpetuate this schism, or shall we, by retracting our false step, try to heal it? Let us proclaim that every man who has completed his medical education goes out with full right and duty to adopt such views as seem to him true, and such practice as seems to him prudent and useful, and that those who entertain different views and adopt different practice have no right to condemn or oppose him except by fair argument. The time for sober thought will come, and the principles and measures involved in this discussion must ultimately be decided by intelligent reflection, and not by the clamor of a noisy crowd assuming to be the guardians of medical interests and honor. To arrive at a decision which will be wise and satisfactory we need no suppression of discussion, no securing of pledges, no virtual expulsion of minorities, nor other devices borrowed from impure sources, but a free interchange of opinions without passion or prejudice, and with one end in view,—the dignity and usefulness of our profession."

We find Abraham Jacobi, M.D., writing about this time as follows: "When I said that the changes which have taken place in homeopathy consisted of dropping one article of faith after another, I mean to express no reproach. I was simply stating the fact that no two decennia of homeopathy look alike. From one such period to another the homeopathic literature becomes less credulous—less apologetic, more medical. The art of diagnosis stands highest in the estimation of homeopaths. The class of men who nowadays are best known in the ranks of the homeopaths are those who are more distant from Hahnemannism than any of the rest. Their talents and studies have been too many to be imprisoned within a sect. How many of them would have been glad to renounce their sectarian name if they had been permitted to do so, cannot be told at present. If there will be no more battle cries of 'Crucify!' there will be many more men who formerly had to be called homeopaths, and called themselves so by habit and coercion, who will be satisfied with the honorable name of physician."

"All of these men who proclaim their independence of Hahnemannian doctrines, and discard even the name of homeopathy, are still classed as homeopaths. By whom? By us. They have been so. They may have been. They claim they are no longer. We claim they are. What a ridiculous position for us, not for them. All they want is to be let alone in their progress toward medical science. We tell them they are outside, and there is no redemption for them. It is we who insist upon the persistence of their sectarian orthodoxy and who are doing the same we see the public doing constantly. We have enlisted the sympathy of the press and public

in their favor and improved their chances of recognition by proclaiming loudly our objections to it. Thus we have both injured the professional dignity and influence, and harmed the public. In order to destroy homeopathy and spoil the public's taste for it, we have commenced at the wrong end. Instead of improving ourselves we have excommunicated those who threw systematic medicine overboard; and nowadays when we meet men who in a genial and gentlemanly manner proclaim their readiness to join us, we refuse to let them do it in their own way, and insist upon their professing loudly that they have always walked in darkness and lived in perversity."

It was William C. Wey, M.D., who said, "The circumstances of the profession, however, have undergone a marvelous change. The thoughts of medical men and of the people have been subject to modification through the shifting events of increasing years, and the laws and the opinions which make laws have been revolutionized by the demands of the day and the hour, and the period has arrived, after much expectation, for a revision of the rules applied to medicine which our fathers so guardedly established."

Theodore W. Dwight, LL.D., on the faculty of Columbia College Law School, gave the following opinion in April, 1882: "The State Medical Society [of New York] exercises a right conferred on it by the statutes of the state. . . . It profits by the exclusion of unqualified persons from practice. When the state authorizes practitioners of other schools to practice medicine, does not courtesy to state authority dictate recognition of their fitness for association? How can the State Medical Society consistently demand public recognition by reason of state legislation, and yet deny it to others who have precisely the same authority?"

Charles A. L. Reed, A.M., M.D., in his presidential address before the fifty-second annual meeting of the American Medical Association, June 4-7, 1901, uttered the following significant words: "I proclaim, events proclaim, the existence of a new school of medicine. It is as distinct from the schools of fifty years ago as is the Christian dispensation from its pagan antecedents. It is the product of convergent influences of diverse antecedent origin. It acknowledges no distinctive title, it heralds no shibboleth. It is a school of human tolerance, of personal independence, of scientific honesty. It is the slave of neither prejudice nor preconception and abandons the accepted truth of yesterday if it only be the demonstrated error of to-day. . . . It makes no proclamation of completeness, no pretension to sufficiency. It recognizes that truth is undergoing progressive revelation, not ending to-day, but continuing through the ages. It greets as a friend him who thinks, though he thinks error, for, thinking, he may think truth, and thereby add to the common fund. It heeds all things, examines all things, judges all things."

Clinical Department.

A SECOND ECTOPIC PREGNANCY IN SAME PATIENT WITHIN PERIOD OF FOURTEEN MONTHS.

BY BRADFORD ALLEN, M.D., NASHUA, N. H.

PATIENT, Mrs. C. S., aged twenty-six. On Dec. 7, 1904, Dr. Maurice H. Richardson removed the left Fallopian tube with ovary and part of the broad ligament, for tubal pregnancy of about two months' duration.

On Feb. 13, 1906, Mrs. S. came to my office, her reason being that she was sure, from her feelings, that her condition was the same as in 1904, that is, insisted she had extra-uterine pregnancy on the other (right) side. She had menstruated regularly every twenty-four days for the past six months, the last menstruation; occurred on Jan. 25; had flowed a little nearly every day since Feb. 9, blood being darker than usual. Occasionally there were neuralgic pains over the right ovary. Examination showed the uterus normal in length and by the vagina slight tenderness in region of the right ovary. She came to the office several times. On Feb. 22 she attended the "Old Liners" ball and fainted, immediately had nausea and vomiting and had general tenderness over the whole abdomen. Temperature was normal and I considered the attack as acute indigestion aggravated by the heated hall and dancing. She was out driving the next day.

I was called to see her every two or three days after Feb. 2. The symptoms being severe pains over the right ovarian region, lasting a few hours; then she would be up and about. Only once was temperature above normal, 100° for one day.

There was an enlargement about the size of a hen's egg, detected by vaginal examination. Diagnosis: Tubal pregnancy or salpingitis. Entered the hospital March 8, temperature 99.2°, pulse 120. On March 10 at 9 A.M., the temperature was 101° and the pulse was increased to 128, and while the nurse was scrubbing the abdomen fluid could be readily made out in the abdomen by the swishing sound.

Assisted by Dr. A. W. Shea I made an abdominal incision about $\frac{3}{4}$ inch to the right of median line and of former incision. Peritoneum and omentum adherent under and about the old cicatrix.

No adhesions with the intestines. Pelvic cavity filled with dark coagulated blood. The uterus and broad ligament were firmly bound down by adhesions. As soon as the uterus could be brought up in sight the right Fallopian tube and broad ligament were found to be greatly thickened, and apparently a large ruptured cyst near the fimbriated extremity of the Fallopian tube.

Clamps were at once applied so as to include these organs with the ovary, one near the uterine extremity of the broad ligament, the second near the pelvic wall; ligatures were applied and the included parts cut away.

Under this portion of the broad ligament was found a firm, hard mass about the size of a large hen's egg, adherent to the broad ligament in front and the pelvic wall behind. Several ligatures were applied where necessary. Pelvic cavity cleared of blood clots and washed out with saline solution. Patient made a rapid recovery and on the nineteenth day was removed to her home.

The case is of especial interest from the fact of being the second ectopic pregnancy occurring in the same person within a period of fourteen months.

An examination made by Dr. Wm. F. Whitney of the ligament, tube, and clots verified the diagnosis.

Medical Progress.

PROGRESS IN GASTRO-INTESTINAL DISEASES.

BY ELLIOTT P. JOWLIN, M.D., BOSTON.

MEDICAL TREATMENT OF GASTRIC ULCER.

THE medical treatment of gastric ulcer has undergone as little criticism during the last two decades as almost any disease. The Leube-Ziemssen plan of rest to the ulcer, with the following gradual increase in diet, has been universally followed. The duration of the restriction of all food by the mouth has varied from a few days to a few weeks, but the general principles of rest to the body and the stomach have universally prevailed. It therefore came somewhat as a shock to medical opinion when Lenzhartz, of Hamburg, at the German Congress for Internal Medicine in 1902, sharply criticised the above plan. He raised the question whether it was of advantage to subject debilitated and anemic patients to still further loss of strength and vitality, and suggested that by so doing the conditions for the healing of the ulcer were made still more unfavorable. Instead of the accepted mode of treatment he advocated a more liberal diet. He began with 200 cc. milk and one to three eggs, within twenty-four hours of the hemorrhage, and added to this one egg and 100 cc. milk daily, until eight eggs were eaten and 1,000 cc. milk drunk. Sugar was given at the start and the amount raised from 20 gm. to 50 gm. at the end of one week. Meat was then allowed in amounts of 35 gm. to 70 gm., and at the end of two weeks rice, zwieback, raw ham and butter. In this way the whole system was treated and not merely the local condition. His detailed schedule¹ is as follows:

| Days after last hemorrhage | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|----------------------------|-----|-----|-----|-----|-----|-----|-------|-------|-------|-------|-------|-------|-------|-------|
| Eggs, gm. | 2 | 3 | 1 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| Sugar, gm. | | | 20 | 20 | 30 | 30 | 40 | 40 | 50 | 50 | 50 | 50 | 50 | 50 |
| Milk, cc. | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 |
| Raw meat, gm. | | | | | | 35 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 |
| Milk rice, gm. | | | | | | | 100 | 100 | 200 | 200 | 300 | 300 | 300 | 300 |
| Zwieback, gm. | | | | | | | | 20 | 10 | 10 | 60 | 60 | 80 | 100 |
| Raw ham, gm. | | | | | | | | | 50 | 50 | 50 | 50 | 50 | 50 |
| Butter, gm. | | | | | | | | | 20 | 10 | 10 | 10 | 10 | 10 |
| Calories | | 280 | 420 | 637 | 777 | 955 | 1,135 | 1,388 | 1,721 | 2,138 | 2,478 | 2,941 | 3,411 | 3,873 |

The suggestion of Lenzhartz received neither approval nor attention, and except for the various articles published from his clinic nothing appeared in confirmation of his views. Recently Wirsing, Minkowski and Senator have taken the subject up, and to a greater or lesser extent have admitted the soundness of his reasoning and acknowledged good results from the use of his method.

Wagner, the assistant of Lenzhartz,² says Lenzhartz began this new plan of treatment with chlorotic girls who had gastric ulcer, but had suffered no hemorrhage. These were fed with nutritious albuminous food from the start. Very little milk was given on account of its bulk, and because these patients often have dilatation of the heart with edema. This first series of cases did well and left the hospital early. Gradually more severe cases were treated in the same manner, and it was found that the pain due to the hyperacidity was thereby alleviated and the condition of the blood improved. By this means the two factors (hyperacidity and anemia) which help in the production of the ulcer of the stomach were controlled. It has been experimentally proven by Quincke-Daetwyler and v. Silberman that artificially produced ulcers in dogs heal much more slowly in the anemic than in the non-anemic animals. Such considerations should certainly make a physician ponder long before he deliberately produces a further loss of weight and strength in his patient. The danger of secondary troubles is not small, and these exhausted individuals are good subjects for tuberculosis. Kliemberger³ has studied the loss which patients undergo under these old methods, and finds that body weight, blood pressure and pulse sink uniformly, but less rapidly, the poorer the conditions at the start. Blood pressure fell 30 mm. mercury, but the hemoglobin and number of red corpuscles remained about constant. The loss of weight per day is about three quarters of a pound; thus the average for eight of his patients each for fifteen and one-half days on rectal feeding was eleven and one-half pounds. Two to three enemata daily were given besides salt solution. Each enema consisted of 200 to 400 cc. milk, two to three eggs, a dessert-spoonful of plasmon and a teaspoonful of salt.

Wagner does not depart from established lines in the remainder of his treatment. An ice bag he considers valuable because it prevents distention, favors contraction and diminishes the

surface of the ulcer. Rest in bed for four weeks is a *non negotium*. Bismuth is employed in 1 to 2 gm. doses, and Blood's salts and arsenic are regularly given. Morphine is never used.

In a recent article by Lenzhartz⁴ are questions whether long abstinence from solid or after nutrition desirable even after a severe

¹Arch. d. Cong. Intern. Med., 1902, 8, 4, 3, p. 128.

²Ibid. med. Woch., 1904, No. 11, p. 112.

³Med. Woch., 1904, No. 1, p. 12.

⁴Med. Woch., 1904, No. 1, p. 12.

⁵Med. Woch., 1904, No. 1, p. 12.

rhage. Such treatment runs counter to recognized teachings, if the hemorrhage occurs elsewhere in the body.

Wirsing in the following year⁶ reported the results of treatment, partly under the old and partly under the new system, of 320 cases of ulcer of the stomach. The article is of especial interest, because it gives the condition subsequent to discharge. The patients were treated by the well recognized methods during the years 1901-1903 inclusive. The condition of 108 was learned in 1905. Sixty-four of these (59.3%) were found to be well, but 44 (40.8%) remained ill. These figures are of especial interest because 78.7% of these patients had been discharged as cured within an average period of three years. They closely resemble the Massachusetts General Hospital statistics for 1888-1898, compiled by Greenough and Joslin,⁷ who showed that while 80% of the patients were considered cured or relieved at the time of discharge, later information revealed relief to have persisted in but 40%. The two sets of statistics for the condition at discharge were practically the same, and doubtless the later results would have more closely approximated had the German after-period of three years been as long as the American. It shows great advance in medical progress to obtain such figures instead of reading of Leube's 2.0% mortality. But it must be remembered that in turn gastric ulcer statistics are of little value because the worst cases are treated to a considerable extent by the surgeons.

Between February and September, 1904, Wirsing treated 42 gastric ulcer patients according to Lenhart's teaching. These individuals took the diet well, gained an average of three kilos and hemoglobin showed an increase of 31.8%. In only one instance was there a subsequent hemorrhage. On later inquiry only one half were discovered to be well, which is a smaller per cent than Wirsing found when the old method was followed. Strangely enough, at first sight, the severest cases were the ones who did the best, whether treated by old or new methods. Apparently this is because their condition is most obvious and they are kept longer in bed. Wirsing recommends the Lenhart method in the severest cases, the Leube method in those of a milder character.

Minkowski⁸ has also followed to a modified degree the Lenhart plan in thirty cases, and expresses himself as pleased with the result. In only one instance was there a secondary hemorrhage. He does not feed the patient the same day as the hemorrhage, because he considers the 300-400 calories which Lenhart prescribes as of little importance. The patient might get as much as this from the blood which is poured out into his own digestive tract. He approved of the Lenhart treatment after two or three days because the form in which the albumin is given does not stimulate the secretion of gastric juice. The diet is soluble and finely divided and occupies

little bulk. He advocates cream and butter and specifies the avoidance of salt.

Senator⁹ has very recently described his treatment of ulcer of the stomach in an excellent article. His postulates are:

1. The diet should not overburden the stomach by quantity or weight.
2. It should be soothing, and not apt to cause hemorrhage, but rather prevent it.
3. It should diminish the secretion of hydrochloric acid.
4. It should be easily digested, and yet sufficiently nutritious.

He believes these requisites were attained by a diet which consists of albumin, gelatin, fat and sugar. The gelatine is readily digested, and has been recently shown to favor the coagulation of the blood, and consequently is hemostatic. Fat and sugar are both nutritious, and alike have the quality of diminishing the flow of hydrochloric acid; moreover, the fat is soothing, and for this quality alone has often been used for analogous processes in the throat and esophagus.

Senator therefore prescribes in the fresh cases of hemorrhage a solution of pure white gelatin, 15 or 20 gm. to 150 or 200 cc. water, which has been flavored with lemon juice. A dessert-spoonful of this mixture is given every one or two hours, or even as often as every quarter of an hour. Fresh butter and cream are given in small quantities though the butter may amount to 30 gm. a day, and the cream to at least 250 cc. The butter may be given frozen in pill form, and the cream can be kept on ice and beaten up with sugar. By this means even 900 to 1,000 calories are procured, which are twice the quantity suggested by Lenhart. He then increases the milk and gives it earlier than by former custom and progresses to shaved meat. Gradually the gelatin is withdrawn. Jellies of all forms are allowed. Should it be desired the butter may be replaced with olive oil, plain or frozen, or in the form of an emulsion. He has not used rectal feeding in recent years.

Shattuck¹⁰ has shortened his customary period of rectal feeding in ulcer of the stomach from two weeks to three or four days and Cutler¹¹ thinks one or two days, or at the most three days, sufficient. Neither of these writers, however, appears to have been cognizant of Lenhart's observations.

HEMORRHAGE IN GASTRIC ULCER.

The diagnosis of gastric ulcer has always attained increased weight if hemorrhage has occurred by the mouth or rectum, but its absence has never ruled out ulcer. The more accurate tests for blood in the stools have greatly facilitated the detection of hemorrhage and thus contributed much to the knowledge of ulcer. But the test has further made treatment more precise, because by it the progress of the healing of the ulcer can be watched. The test is repeated here,

⁶ Arch. f. Verd., 1905, Bd. xi, p. 197.

⁷ Jour. of Med. Sciences, 1899, August, Amer.

⁸ Med. Klinik, 1905, No. 52.

⁹ Deut. Med. Woch., 1906, No. 3, p. 95.

¹⁰ BOSTON MEDICAL AND SURGICAL JOURNAL, 1905, clii, p. 327.

¹¹ *Ibid.*, p. 329.

though mention has been made of it on two other occasions by the JOURNAL.

Rub up in a mortar 10 cc. of liquid feces or one half that quantity, if formed, with 2 cc. of glacial acetic acid; add 15 cc. of ether and transfer to a test tube. Insert a cork and mix for five minutes by gently turning the tube up and down. Violent shaking often produces an emulsion which later makes the decantation of the ether difficult. After the ether has separated, decant. Add to the ethereal solution ten drops of a freshly prepared tincture of guaiac, made by shaking a few granules of guaiac in half a test tube of alcohol, and add thirty drops of hydrogen peroxide. A blue color indicates the presence of blood. A single positive or negative test is of little value. The only fault to find with it is that it is too delicate. Blood which enters the gastro-intestinal tract from the mouth, throat or lung may, of course, give the reaction, and similarly, blood which is produced by the irritation of the stomach tube may lead to confusion. The introduction of blood in the form of fish, meat or their extracts can be easily avoided by excluding these articles from the diet for three days before making the test.

Ewald¹² has recently pointed out the advantages and disadvantages of the test. "It must be said at the very start that the diagnosis by means of the demonstration of occult blood is not lightened but made more difficult, even though this may sound paradoxical. It gives us the idea that something diseased exists where we have not expected, or have thought that it no longer existed." Its chief value comes from its presence in the stools of patients with gastric ulcer. But even here it is only found during the active or recurrent stages of the ulcer. This also holds true of cancer, though Boas is right when he claims that the stools of cancer patients generally show its constant presence.

Occult blood is valuable in diagnosis and treatment of ulcer, because it obviates the necessity for using a stomach tube. It is again valuable in differentiating ulcer from a neurosis. Its value in treatment is shown by the fact that Ewald has had patients who have had no symptoms of ulcer for a week, and yet have shown blood regularly in the stools. The indication would be to keep such patients abstemious, and to continue a careful diet.

It has been suggested that the constant presence of blood in an ulcer suggests the change of the ulcer to a cancer, but this is not invariable, nor does the constant presence of blood with patients on a milk diet mean cancer. Occasionally occult blood is a preliminary symptom of hemorrhage. On the other hand it may be useful in ruling out the probability of the occurrence of hemorrhage when such is anticipated.

Steele¹³ agrees in general with the conclusions above set forth, but also calls attention to the value of the blood test in determining the uselessness of further medical treatment. Blood in other gastro-intestinal infections is interesting

but not definite. For instance, Ewald recently had an undoubted case of cancer of the sigmoid flexure, and again and again failed to find blood in the stools. The diagnosis was confirmed by operation. In another case repeated positive tests caused alarm, but further observation showed that the hemorrhage must have been due to a polyp too high up for recognition. One must further consider gastro-intestinal hemorrhages in cirrhosis of the liver, and also in septic processes. The presence of blood in other doubtful cases may, under circumstances, lead to erroneous diagnosis by diverting attention from the real seat of trouble.

It must be remembered in differential diagnosis that the blood in pulmonary hemorrhages is not always bright red and foamy, and in gastric diseases dark and tarry. If the blood collects in an acid free stomach and is then quickly expelled, it looks bright red; and conversely in hemorrhages from the lungs, if the blood has remained some time in a cavity or dilated bronchus, it may be dark and without foam. Thin, slightly changed blood in the stools does not always mean that it comes from the lower intestine. It may have its source from the small intestine, or even the stomach when the hemorrhages are abundant and the peristalsis active.

Ewald has had little success from the use of styptisin, syptol and stagnin. Adrenalin, gelatin and calcium chloride have not been of essential value. He has, however, washed the stomach with ice water with apparent advantage in cases of severe hemorrhage. To lessen the discomfort the throat is sprayed with a weak solution of cocaine, and occasionally morphine is given. Pains are taken to insert the tube but a short distance into the stomach until the ice water has been poured in. Then it can be inserted without harm. He strongly recommends the use of lavage with ice water before resorting to operative interference.

(To be continued.)

Reports of Societies.

THE AMERICAN THERAPEUTIC SOCIETY.

SEVENTH ANNUAL MEETING, HELD AT THE ACADEMY OF MEDICINE, NEW YORK, MAY 3, 4 AND 5.

THURSDAY, MAY 3.

PRESIDENTIAL ADDRESS, GALLSTONE DISEASE.

THE PRESIDENT, DR. CARL BECK, New York, selected for the subject of his address, "Gallstone Disease." During the last few years, he said, the place formerly held by heated debates on the subject of appendicitis has been usurped by more or less antagonistic discussions concerning gallstones and their cure. It seemed unfortunate to him that prominent men in the profession were making the attempt to draw analogies between appendicitis and cholelithiasis, for appendix and gall bladder, in the anatomical, physiological and clinical sense, were two entirely different organs. There was a very striking contrast in the fact that cholelithiasis is, in the first place, dependent

¹² Berl. klin. Woch., 1900, No. 9 and 10, p. 254.

¹³ N. Y. Med. Jour., 1900, Jan. 20.

upon the presence of a foreign body and is marked by the very different forms of reaction on a mucous membrane *sui generis*. The essential part, then, was the stone.

If we summed up the main etiological factors we found that in general the gall bladder was the shop for the manufacture of gallstones; not merely a receptacle, as in the case of the urinary bladder. Such conditions as cause a stagnation of bile were especially liable to favor the formation of stones, but that the stagnation itself was not of importance was evident from the fact that concrement formation usually failed when such stagnation-producing conditions as closure of the ductus choledochus by chronic inflammation, by cicatricial contraction, or by tumefaction, were present. While he would admit that the bacterium plays a leading part in the formation of stones, he would dispute the contention of Naunym that the bacterium alone is the exciting agent. There must be a third agent, which, acting in unison with the other two factors, favored formation; but this had not as yet been disclosed. It seemed to him that tissue changes must be prominent in this action, and that this point ought to be determined in the laboratory. Especially did the matter of hereditary predisposition speak for such an assumption. It was the special distinction of Naunym to have established the differentiation between a regular and an irregular cholelithiasis. He classified the first amongst those processes which do not complicate themselves with noteworthy signs of inflammation, while he regarded the irregular cholelithiasis as a condition which manifests itself by the additional appearance of inflammatory signs. The recognition of these two distinct forms, Dr. Beck thought, presents the key for the understanding of the indications. In other words, it decides the question as to whether medical or surgical therapy is to be employed. Having referred to the medical and dietetic treatment of cholelithiasis, he went on to say that if the attacks always recurred with renewed violence and if inflammatory symptoms of serious nature made their appearance, surgical interference was called for. He then took up some points of technique in the operations performed upon the gall bladder. In conclusion he stated that while some surgeons now recommend ectomy as the normal procedure in cholelithiasis, he himself was unable to see the reasons for such a radical measure in the majority of operative cases. When cystostomy is performed the inflammatory process in the mucous membrane of the gall bladder quickly heals while drainage is carried on. We also have the advantage that stones which pass from the hepatic ducts can still be extracted. Furthermore, ectomy carries with it greater danger to the life of the patient. In a large number of gallstone operations done by him in hospital and private practice Dr. Beck has only exceptionally found it necessary to extirpate the bladder.

DR. CLARENCE J. BLAKE, Boston, read a paper on the THERAPEUTIC EFFECT OF SOUND WAVES OR MECHANOTHERAPEUTICS OF THE EAR.

(To be published in the JOURNAL.)

DR. F. M. POTTENGER, Monrovia, Cal., read a paper on

THE UNDERLYING PRINCIPLES OF TUBERCULIN THERAPY.

He said that in spite of the mass of experimental and clinical evidence to its value, which had now been accumulating for fifteen years, there seemed to be a very hazy idea as to what tuberculin is, how it acts and what it is expected to do. In the elucidation

of his subject he discussed, first, nature's method of cure in specific diseases; second, conditions which militate against tuberculosis curing itself, and, third, the manner in which specific inoculations of tuberculin aid in the cure of tuberculosis. Nature's method of cure consisted in the production by the organism of defensive bodies in response to stimulation from toxins engendered by the specific microbe causing the disease. In tuberculosis, owing to the character of both the bacillus and the tubercle, this specific toxin failed to gain access to the blood in proper quantities, and at the proper intervals, to be effective. In this connection it was to be remembered that too great stimulation is harmful and will defeat nature's purpose, just the same as a failure of stimulation. That the blood was deficient in protective substances was shown by the measurement of its opsonic power. This, as a rule, was below the normal standard. That the opsonic index in patients suffering from tuberculosis can be raised by the injection of tuberculin had been established by Wright, Bullock, Lawson and others. Their observations were in harmony with the observations of Koch, Moeller and others as regards the increase of the agglutinating power of the blood after the administration of tuberculin. This increase in the agglutinating and opsonic power of the blood meant that the natural defenses of the organism had been increased. The opsonic power was that power of the blood serum which prepared the bacilli for destruction by the leucocytes.

In a series of cases tabulated by Lawson and Stewart the leucocytes of patients treated by ordinary sanatorium methods were able to destroy only 75% of the number of tubercle bacilli that a normal person's blood should destroy; while the leucocytes of the same patients, after treatment by tuberculin, were able to destroy 19% more than the leucocytes of a normal individual. The value of this increase of the natural defenses of the organism was evident. The one reason why tuberculosis killed was because of its tendency to spread to new tissues, either adjacent or distant, and it had long been claimed by those familiar with tuberculin therapy that the disease shows much less tendency to spread in those cases treated with tuberculin than in those treated by ordinary methods. In the light of these new discoveries in immunity and immunizing treatment this was easily explained. This immunizing action of tuberculin was not, however, its only method of aiding in bringing about a cure. When properly administered it furnished, by promoting the formation of fibroid tissue, a stimulation which hastened the healing of tuberculous areas. While tuberculin thus had theoretically a firm foundation on which to stand, its clinical workings confirmed the theory. Tuberculin was undoubtedly of great value in chronic nonfebrile cases of tuberculosis, but it was in early cases that the most brilliant results were to be expected. Among 1,200 first-stage cases the data of which were collected by Dr. Pottenger, there were 20.2% more apparent cures with tuberculin than without. Five hundred and eighty-nine of the cases were given tuberculin and 611 were treated in sanatoria with ordinary open-air treatment. Another test of the value of tuberculin was the permanency of results; it being generally accepted that cases treated by it show less tendency to relapse. Another clinical proof of the value of tuberculin was its action upon local visible tuberculosis, such as is found in the larynx. No remedy offered so much hope in tubercular laryngitis as tuberculin, and with patience and perseverance a cure could be obtained in a large percentage of cases. Recent reports from Wright

and Bullock showed that tuberculin could be used to advantage also in other forms of tuberculous, such as ulcerations of the subcutaneous tissue and bone, invasion of the lymph glands and infections of the genito-urinary system. With the mass of evidence before us, he said, in conclusion, we must admit that tuberculin therapy is in accord with the modern ideas of immunity; that theoretically tuberculin is capable of increasing the natural defenses of the organism, when given in the proper doses at proper intervals, and that clinical experience warrants a more general use of it in combating tubercular infection.

Dr. H. T. OSBORNE, New Haven, read a paper on

THE THERAPEUTIC VALUE OF ERGOT.

He had never known any of the medicinal preparations of ergot to cause the condition of ergotism which was formerly observed to result from the use of rye infected with the *claviceps purpurea*. He regarded the fluid extract as much the most efficient preparation, and advocated its hypodermic injection. Dr. Osborne would employ ergot in a considerably larger number of conditions than is commonly done. He was convinced that it intensifies the action of morphine and he had found it of great service in diabetes insipidus and cerebro-spinal meningitis.

Dr. R. W. WILCOX, New York, read a paper on

THE MEDICAL TREATMENT OF GALLSTONE DISEASE.

He said that notwithstanding the now very voluminous surgical literature upon gallstones, a careful consideration of the subject led him to regard surgery as adapted only to stones of gall bladder origin, and then only under conditions demanding mechanical relief—obviously a very small part of the subject of gallstone disease. The treatment of gallstone disease was practically entirely medical, while that of gallstones themselves were generally surgical. If this distinction were kept clearly in mind, more would be expected of the internist, and fewer disappointments laid at the door of the surgeon. The recognition of the microbial origin of gallstones dated only back to 1886. Since then it had been shown that both the colon bacillus and the typhoid bacillus might be causative factors. That other infections were directly responsible had been his experience, for low grade cholecystitis had been observed after acute infectious pneumonia, acute rheumatic polyarthritides and chronic tuberculosis. The treatment of microbial causes of gallstones was the treatment of the infection itself, and the limitation of the opportunities for entrance of the infectious agent. In passing in review the mechanical causes, he said that chronic venous congestion of the portal system was the great underlying cause of the gallstone disease.

In the treatment of cholelithiasis the important features were the regulation of congestions and inflammations in the portal system and dependent organs and local antiseptics. The Spa treatment was one which appealed to many. Within recent years practically as good results could be obtained at home by the use of a proper regime. Having referred to diet, exercise and the prohibition of alcohol, Dr. Wilcox expressed his preference for salicylic acid as a cholegogue, because it was also a biliary and intestinal antiseptic. The use of bile acids and their salts was better than the administration of bile itself, and sodium glycolate was the most satisfactory of the preparations. Both bile as a whole and its salts were, however, uncertain in action. Like salicylic acid, the acid sodium oleate was exerted by the epithelium of the bile ducts to assist in dissolution.

Four to eight pills of the following combination,

given in a full glass of water once or twice daily, had proved efficient in his hands in some thirty-five instances of gallstone disease: 14 gr. each of salicylic acid and acid sodium oleate; 1 gr. of phenolphthalein; 4 gr. of menthol. The phenolphthalein was a safe and prompt laxative, while its antiseptic effect was prolonged throughout the alimentary tract. The elimination of gallstones of the hepatic variety was generally rapid. Here amyl valerianate, 15 minims in capsule, two hours before breakfast and after supper, was of service in the prevention of pain. After detailing two illustrative cases he said: The conclusion we should reach is that gallstone disease is not purely a disease due to a foreign body, but is primarily an hepatic disorder. The removal of these stones has but little to do with the cure of the patient, for when the end-result, the removal of the gallstones, has been accomplished by surgery the patient is but at the commencement of his treatment to remove the cause of the disease, which is entirely within the province of the physician. It is the congestions and inflammations in the domain of the portal system that require treatment, and the infectious catarrhs of the bile ducts and gall bladder and faulty bile formation in the liver that need correction, and these are purely medical problems.

(To be continued.)

Recent Literature.

Recent Advances in Physiology and Biochemistry.

By BENJAMIN MOORE, J. J. R. MACLEOD, LEONARD HILL and M. S. PEMBERTON. Pp. 740. New York and London: Longmans, Green, & Co. 1906

This volume marks a new enterprise in the literature of physiology and biochemistry; it stands between the elaborate reviews of work in special fields which fill the "Ergebnisse," and the rather meager statements found even in the best textbooks. The attempt of the writers, all of whom are experienced teachers and investigators, has been to bring before the physician who is interested in the fundamentals of medicine a review of the most important recent work having practical bearings. Such subjects as diabetes, uric acid metabolism, hemolysis and immunity, mountain sickness and carbon sickness with oxygen as a therapeutic agent, the metabolism of fat and the treatment of obesity, metabolism as influenced by temperature, by relative dryness of the atmosphere, by work, diet, baths, clothing, etc., the causation of dyspnea and of Cheyne-Stokes respiration, the influence of thyroid and suprarenal glands on metabolism, the action of digestive ferments, catalysts and chemical extracts, the colloidal structure of protoplasm and the influence of electrolytes in solution, the formation and absorption of lymph, the urinary secretion, these and other subjects suggest the wide range of topics that are treated. Each article is followed by a bibliography which will lead the reader on to the complete literature of the matter treated. An excellent index makes the many important points of the articles readily available.

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THE ORGANIZATION OF THE MEDICAL PROFESSION IN AMERICA.

THE organization of the medical profession in America will doubtless be a very gradual process accompanied by many vicissitudes and changes of policy. This is natural and inevitable in a country of such size wherein the interests of different sections, although centered in the general good, must naturally preserve a certain degree of autonomy. Progress up to this time has been altogether satisfactory. The state societies have developed according to the several needs of the regions they represented, and the national society has striven to unify these diversified elements. The result has been the beginning of an organization which has in it much promise of good. It must, however, also be remembered that this country is so large and the increase of population is so great about certain centers that the completest individuality must exist if the good of the whole is to be best subserved. It is altogether possible that the future will see the state societies welding themselves into larger units in certain limited sections of the country. It is, for example, becoming evident that the East, the Middle West, the West and the South might each develop a representative medical organization which would go beyond the limits of the individual state societies but would still be less cumbersome than the American Medical Association at large bids fair to become. If the American Medical Association increases at its present rate, and there can be little doubt that this will be the case, it is clear that the mere mechanical difficulties of a great general meeting will

become prohibitive. It is still possible to bring together four or five thousand physicians with results of great value. The problem will become a very different one when perhaps fifteen thousand are assembled for a common object. A natural consequence of this situation would be the closer organization of certain affiliated state societies based on geographical lines. There is at least in this suggestion the possibility of a solution of the mere problem of numbers. Some time ago Dr. Edward R. Campbell, of Bellows Falls, Vt., in an address suggested the possibility that the New England States might join in the formation of a New England Medical Association, which could hold its meetings at stated times in one or another of the cities of the six New England States. By so doing the individual state societies would no doubt be benefited through the stimulus of contact with men from other states, and the physicians of this region of the country would be brought into closer relations than is possible through the medium of a single state society.

In other words, what we shall in the future need is a central organization represented from every part of the country, together with individual organizations of states or groups of states which will develop along their own lines according to the peculiar problems presented by the part of the country in which they happen to be located. It is, perhaps, useless to speculate as to what course events will take, but it is clear that the ultimate organization of medicine in America demands both the perfecting of the central association and the individualistic development of the various organizations which form its component parts. The problem in its details is evidently a difficult one and will demand wise judgment and foresight in no small degree if the good of the whole and the good of all its parts is to be most completely attained.

THE MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

THE actual success of a great medical meeting cannot be absolutely determined during the days it is in progress. As we go to press, the fifty-seventh annual meeting of the American Medical Association is occupying the attention of a representative body of physicians from every part of the United States and not a few from Canada and abroad. It is, however, doubtless safe to assert that the meeting will be productive of much good to the cause of medical science. The efforts which the committee of arrangements

has made, through the issuance of a guide book and various smaller pamphlets of directions, in addition to the official program, should have made the task of our visitors easy in solving the proverbial intricacies of Boston streets and localities.

In one sense it is regrettable that so much has been offered by the association this year since it is quite impossible for any member, even in one department of medicine, to attend all the meetings and demonstrations that are given. On the other hand, the principle of the elective system is evidently coming into vogue in these great medical meetings as elsewhere. A man must choose what he particularly wishes to see or study rather than follow the general line of least resistance. The plan of inaugurating a clinical exhibit in various parts of the city exemplifies admirably this idea, and we have no doubt that the facilities offered for special study by this means have been fully appreciated by the visiting members of the association. Although the meetings are still in progress, it is already perfectly evident that the elaborate organization of the committee of arrangements has more than justified itself in the ease and facility with which the members have been able to find their way through the maze of material offered them. In general, we are not premature in saying that extensive as its plan has proved to be the meeting has been a success, and we hope has offered something new to every member. It is unwise to forecast the future, but it is nevertheless of interest to speculate as to the changes which will take place in medicine and in its manner of presentation before the next meeting of the association in this city.

THE ORIGIN OF THE BLOOD PLATES.

We publish in this number an article of great significance to scientific medicine. Dr. J. H. Wright presents the results of a careful investigation on the origin and nature of the blood plates in a communication which cannot fail to excite the interest of students of the blood in particular and of medical men in general. It is unnecessary with the article before our readers to discuss Dr. Wright's methods of procedure in reaching the important conclusions which his paper presents. It is, however, interesting to observe that these conclusions are based upon the results of a special staining method. Not the least of Dr. Wright's contributions to medicine has been his readaptation of old methods, and the discovery of new, to

special histological problems. The present investigation is another example of the necessity of originality of technique and the capacity to apply such originality to individual problems.

MEDICAL NOTES.

A PENSION FOR MME. CURIE. — It is announced that the French Government is to give Mme. Curie a pension of 12,000 francs in addition to a university chair.

OFFICERS OF AMERICAN DERMATOLOGICAL ASSOCIATION. — At the Thirtieth Annual Meeting of the American Dermatological Association, held in Cleveland, Ohio, May 31 and June 1 and 2, 1906, the following officers were elected for the ensuing year: President, Dr. Arthur Van Harlingen, of Philadelphia; vice-president, Dr. William A. Pusey, of Chicago; Secretary and Treasurer, Dr. Grover W. Wende, of Buffalo.

OFFICERS OF THE AMERICAN ASSOCIATION OF PATHOLOGISTS AND BACTERIOLOGISTS. — At the recently held meeting of the Association of Pathologists and Bacteriologists the following officers were elected for the coming year: Dr. William H. Welch, of the Johns Hopkins University, president; Dr. A. S. Warthin, University of Michigan, vice-president; Dr. H. C. Ernst, Harvard Medical School, secretary, and Dr. H. W. Williams, of the University of Buffalo, treasurer.

HONORARY DEGREE TO BARON TAKAKI. — Baron Takaki has been the recipient of an honorary degree from Durham University. It is stated that the Baron was further honored by being drawn from the railroad station to the hall, where the degree was conferred, by the students. Baron Takaki was formerly Director General of the Japanese navy, and before coming to this country as a guest of the American Medical Association had given three lectures at St. Thomas's Hospital in London. He was a student at this hospital in 1874 and there distinguished himself by receiving the treasurer's gold medal and the Cheselden medal for surgery.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON.

For the week ending at noon, June 6, 1906 there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 64, scarlatina 35, typhoid fever 8, measles 81, tuberculosis 51, smallpox 0.

The death-rate of the reported deaths for the week ending June 6, 1906, was 20.68.

BOSTON MORTALITY STATISTICS. — The total number of deaths reported to the Board of Health for the week ending Saturday, June 2, 1906, was 240, against 200 the corresponding week of last year, showing an increase of 40 deaths and making the death-rate for the week 21.03. Of this number 132 were males and 108 were females; 234 were white and 6 colored; 162 were born in the United States, 70 in foreign countries and 8 unknown; 57 were of American parentage, 163 of foreign parentage and 20 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 38 cases and 2 deaths; scarlatina, 29 cases and 1 death; typhoid fever, 6 cases and no deaths; measles, 75 cases and 1 death; tuberculosis, 46 cases and 21 deaths; smallpox, no cases and no deaths. The deaths from pneumonia were 44, whooping cough 2, heart disease 22, bronchitis 5 and marasmus 2. There were 13 deaths from violent causes. The number of children who died under one year was 51; the number under five years 75. The number of persons who died over sixty years of age was 60. The deaths in public institutions were 72.

There were 3 cases and 1 death reported from cerebrospinal meningitis during the week.

MEETING OF THE HOUSE OF DELEGATES, AMERICAN MEDICAL ASSOCIATION. — The annual meeting on June 5 of the House of Delegates of the American Medical Association was more largely attended than any hitherto held.

LYNN HOSPITAL. — This hospital has been in existence twenty-five years, its charter having been granted the latter part of the year 1880. Since its inception it has grown to be a hospital of much importance. During the year 1904 the number of patients admitted was 1,441, whereas during the year 1905 the number admitted was 1,721, an increase of 280. The average number of patients in the hospital per day was 75.

PREVENTION AND CONTROL OF TUBERCULOSIS. — A meeting will be held, June 12, at two o'clock, in the large lecture room of the Administration Building of the new Harvard Medical School on Longwood Avenue, of all committees appointed by the district societies of the Massachusetts Medical Society, to consider the best measures for the prevention and control of tuberculosis. This meeting is held the day before the general

sessions of the Massachusetts Medical Society and it should be largely attended. The committee having the matter in charge is made up of Dr. Alfred Worcester, Dr. H. Lincoln Chase and Dr. Henry Jackson.

FORMAL OPENING OF THE AMERICAN MEDICAL ASSOCIATION MEETING. — The formal opening of the meeting of the American Medical Association was held on the morning of June 6. The speakers on this occasion were President Eliot of Harvard University, who eulogized the medical profession; Dr. A. T. Cabot, president of the Massachusetts Medical Society; Gov. Curtis Guild, of Massachusetts and Mayor Fitzgerald, of Boston. The mayor spoke particularly of the great services medicine was rendering to the people and alluded particularly to our hospitals, not omitting the hospital for tuberculosis which he has from the first strongly advocated. Dr. William J. Mayo, at the end of these exercises, was formally installed as president of the association for this year.

LOVING CUPS FOR DR. H. L. BURRELL AND DR. R. B. GREENOUGH. — As a recognition of the efforts which Dr. H. L. Burrell as chairman and Dr. R. B. Greenough as secretary of the general committee of arrangements of the American Medical Association have made, loving cups were presented them at a dinner given by President Mayo and Dr. Ochsner. The dinner was in honor of the foreign guests of the association and was given on the evening of June 4. Among those present were: Baron Takaki; Dr. Frederick Trendelenburg, Leipzig; Dr. Simon W. Tunstall, Vancouver; Dr. Murray MacLaren, St. John, N. B.; Dr. James Bell, Montreal; Dr. Francis J. Shepard, Montreal; Dr. H. H. Chown, Winnipeg; Prof. Alfons von Rosthorn, Heidelberg; Prof. Alfred Dührssen, Berlin; Dr. James F. W. Ross, Toronto; Dr. Wesley A. Mills, McGill University, Montreal; Dr. Max von Frey, Würzburg; Prof. Max Joseph, Berlin; Professor Krehl, professor of the medical clinic, Strassburg; Dr. Richard A. Reeve, Toronto, president British Medical Association.

NEW YORK.

BEQUEST TO ARMY MEDICAL AND SURGICAL LIBRARY. — In the will of Edward A. Crane, of New York, who died recently, there is bequeathed to the Army Medical and Surgical Library at Washington a copy of the very rare work, Clowes on "Gunshot Wounds," which was published in 1596.

A QUESTION OF FEES.—In engaging beforehand to attend an accouchement case for a stipulated sum it is just as well that in the agreement made some provision for additional compensation in case of complications should be understood. Some months ago a grocer living in Ozone Park, Borough of Queens, secured the services of a physician for the confinement of his wife, for which he agreed to pay a fee of \$18. When, possibly owing to the fact that the air of Ozone Park is especially conducive to fecundity, the baby came to be born, there were three of him, and, having brought the triplets successfully into the world, the doctor, properly setting an increased value on his services, sent in a bill for \$50. The grocer refused to pay this, on the ground that the agreement made called for only \$18, and the case went to court. It was tried in the Jamaica Municipal Court on May 31, and decided against the physician. In view, however, of the fact that the delivery of the triplets required the services of two other medical men, and that certain medicines and appliances were furnished by the plaintiff, judgment was rendered for \$30.

MORTALITY RECORD. The condensed quarterly report of the bureau of records of the City Health Department for the quarter ending March 31, 1906, shows that the number of deaths during this quarter was 19,915, representing a death-rate of 19.16, per 1,000 of the population, as against an average of 19,269 deaths for the corresponding quarters of the preceding five years, producing (with the smaller population) a death-rate of 20.65, a decrease of 1.49 points. The first quarter of the year is seen, therefore, to have been a very healthy one. The greatest decrease in the mortality from any one disease was in that from lobar pneumonia, and the low mortality from influenza was associated with a correspondingly low rate not only in the latter affection, but also in organic heart diseases, Bright's disease, tuberculous diseases and old age. The record would have been still more favorable but for the mortality from measles, which was far above the average and which was attended by a proportionate increase in the deaths from bronchopneumonia. Comparing the number of deaths from the principal causes with those of the preceding quinquennial averages of the corresponding quarters, corrected to correspond with the increase of population, the following decreases are found: Typhoid fever, 42; malarial fevers, 11; smallpox, 17; scarlet fever, 185; influenza, 239; pulmonary tuber-

culosis, 115; other tuberculous diseases, 46; apoplexy, 34; organic heart disease, 64; acute bronchitis, 112; lobar pneumonia, 656; Bright's disease and nephritis, 136; old age, 102; suicides, 9. Those showing increases were measles, 301; whooping-cough, 44; diphtheria and croup, 48; cancer, 14; bronchopneumonia, 400; accidental deaths, 44; homicides, 24. The number of deaths under five years of age increased 111 (a result to be attributed to the increase in measles and bronchopneumonia); those from ages five to sixty-five years decreased 1,005, and at ages sixty-five and over, 327.

CITY AND SUBURBAN HOMES COMPANY.—The annual meeting of the City and Suburban Homes Company was held on May 28, when the President, Dr. Elgin R. L. Gould, who was city chamberlain under the administration of Mayor Low, and the other directors were unanimously re-elected for three years. The statements made by President Gould, in his annual report, as to the business of the company were extremely encouraging to those who have held that investment in model tenement houses may be made to yield a satisfactory return for capital, while performing a substantial and greatly needed public service. Previous to 1900 the dividends paid on the stock of the corporation were 3% and 3½%, and since then they have been 4%. The directors have now decided to put the stock on a 1½% basis. The present assets of the company are \$4,175,000, without taking into account the increase in ground values, and it is believed that as soon as investments approach the sum of \$6,000,000 it will without difficulty be able to pay 5%, to which its charter limits dividends. The company has provided model tenement accommodation for 1,115 families in Manhattan and 162 houses at Homewood, in Brooklyn. After referring to the fact that its collections have been made with no appreciable loss from bad debts, Dr. Gould said, "These figures furnish an irrefutable answer to the absurd, but oft repeated assertion, that wage earners and their families do not appreciate the best class of living accommodations." It might be worth while to add, he went on to say, that in addition to ordinary purchases of capital stock in the company, there is a field for investment in such stock that should appeal to those who have large sums of money to invest for special purposes in philanthropic work. The principal performs a useful public end in extending improved housing in New York, and the

income goes for the benefit of the endowment fund. A two-fold purpose is thus accomplished by the one gift.

Obituaries.

CHARLES WARRENNE ALLEN, M.D.

DR. CHARLES WARRENNE ALLEN, of New York, died at Gibraltar on May 31, from typhoid fever. He had been attending the International Medical Congress at Lisbon, and was on his way home, by way of Naples, when he was taken ill. He was persuaded to leave the steamer at Gibraltar. Dr. Allen was born in Flemington, N. J., Dec. 4, 1854, and was graduated from the College of Physicians and Surgeons, New York, in 1878. After post-graduate courses in Paris and Vienna he devoted himself to the treatment of diseases of the skin in New York, and became a recognized authority in this specialty. From the first he took a great interest in radiology, and he made a number of valuable contributions to the scientific study of the subject. He was the author of "Radiotherapy, Photography, Radium and High Frequency Currents" and "The Practitioner's Handy Book of Medical Progress," and wrote a number of chapters in the "Twentieth Century Practice of Medicine." At the time of his death he was Professor of Dermatology in the New York Post-Graduate Medical School, consulting dermatologist to the Randall's Island hospitals and consulting genito-urinary surgeon to the City Hospital, on Blackwell's Island. Dr. Allen's last public appearance in New York, shortly before he sailed for Europe, was in March, when at the Medical Association of the Greater City of New York he took part in a symposium on the Present Status of Radiology in Diagnosis and Treatment. It is a curious coincidence that Dr. Allen's death occurred on the same day as that of Dr. Louis A. Weigel, of Rochester, who, like Dr. Allen, was one of the principal speakers on the last previous occasion when this topic was discussed before the association.

LEWIS A. WEIGEL, M.D.

DR. LEWIS A. WEIGEL, of Rochester, one of the best known surgeons in the state of New York, died on May 31, at the age of fifty-two years. His case appears to be one to be added to the list of those in which prolonged exposure to the x-rays has caused cancer in a previously healthy individual. Dr. Weigel was for many years an enthusiastic worker in radio-therapy, and one of the highest authorities on the subject. The disease from which he died first manifested itself in the hands, and early in 1904, Dr. Welch of the Johns Hopkins Hospital from the examination of specimens submitted to him, pronounced it of malignant character. His case excited much interest, and after a consultation partici-

pated in by a number of eminent surgeons and physicians, the right hand was amputated at the wrist, and the greater portion of the left hand also removed. Temporary improvement in his condition resulted, but in a short time the disease manifested itself in other parts, and subsequently other operations became imperative. Part of the right shoulder was removed, and then it became necessary to excise a growth of considerable size involving the right breast and adjacent muscular tissue. The last operation was performed in February of this year. Dr. Weigel knew that his condition was hopeless, and awaited the end with philosophical resignation, his chief consolation being that he had done something towards the advance of medical science.

HALL CURTIS, M.D.

In the death of Dr. Hall Curtis, at the age of seventy-one, which took place June 1, at his summer home in Beverly Farms, Boston loses one of its earlier generation of practitioners. Crippled by chronic disease Dr. Curtis for many years has not actively practiced his profession, but until ill health forced him into private life he held high rank in his profession over a long period of years. He was graduated from Harvard College in 1854 and later took his degree at the Harvard Medical School. During the Civil War he served as surgeon of the Twenty-fourth Massachusetts Regiment. He leaves a widow, a son and a daughter.

Disseclanp.

GOVERNMENTAL MEAT INSPECTION.

THE *Medical Record* makes the following pertinent suggestions regarding the inspection of meat: "Whatever may be the feelings with which those interested in the livestock and meat packing industries regard the Beveridge Meat Inspection bill, which was passed by the Senate on May 25, there is no doubt that the people of the country at large will be greatly relieved when its provisions are put into force. While no layman can realize to the full the disgusting possibilities and actual perils to health that attend meat packing done in a slovenly or dishonest way, or even meat packing carried on under conditions in which any solitary precaution that ingenuity can devise is neglected to the slightest degree, the nauseating details said to attend the preparation of this class of foodstuffs have lately been so forcibly presented to the public through various literary channels that the psychological moment for reform seems truly at hand. If the conditions in the great packing houses are as bad as they have been painted, no legislation intended for their improvement can be too drastic, while if the packers are innocent of wrongdoing they have nothing to fear from

the proposal to make the inspections more rigid. It is, unfortunately, not very probable that the secrets of the packing house have been exaggerated in the telling, and we can but hope that the entire matter will now be put on so firm a basis of governmental supervision that even the pathologically trained imagination of the physician need conjure up no unpleasant specters of diseased animals, filthy surroundings, or unclean workmen, when he partakes of such flesh food as his nature may incline him to use."

NATIONAL VOLUNTEER EMERGENCY-SERVICE MEDICAL CORPS.

The calamity upon the Pacific coast has become not only heartrending but absolutely stupefying in its unprecedented and stupendous proportions. Moved by a common impulse, the whole country is hastening to alleviate the distressed.

There are occasions of disaster and epidemics, of all too frequent occurrence, when all men recognize the tremendous part played by the medical profession in the relief of suffering and the saving of life, but even we, the members of that profession, have as a rule no adequate and abiding realization of the part. This is probably due to the fact that while our aid is always rendered promptly and heartily, it is done on the spur of the moment and without the advantage of special preparation for the emergency. In other words, it is because of lack of organization, and this lack detracts materially from the effectiveness of the best intended efforts.

This need of readiness for the purpose of rendering medical and sanitary aid and relief in emergencies, including catastrophes, pestilence and war, is met with by the National Volunteer Emergency-Service Medical Corps, which is modeled on a distinct military basis, provided with officers varying from surgeon-major-general, sanitary engineers to nurses and trumpeters, and with material appliances from transports and temporary shelters to cooking utensils. Such a corps especially trained, disciplined and fully equipped would be ready for any and every immediate emergency service, whether casualty, epidemic, war or civic function where there is a large aggregation of people liable to accidents or overcome by heat.

With such hospital and ambulance corps, a detail, company, platoon or battalion permanently established and located in every city and town, ready to render relief whenever and wherever required and fully prepared to be called into requisition at a moment's notice to assist state and local health boards in the enforcement or execution of sanitary measures for public welfare and safety; or in the field, at the call of civic or military authorities to render aid to victims of calamities, as exigencies may require, would inspire the confidence of the people and assure the safety and prosperity of the community.

This organization is not antagonistic to any Red Cross society, with whose operations it does not in any way desire to interfere, its intended scope, being technical and professional, as far wider reaching and efficient, being a strictly medico-sanitary body after the model of the Medical Department of the United States Army and Medical Staff Corps of England. It is confidently expected that its services will be instantly forthcoming when required, as are those of a fire brigade — all things necessary in time of disaster being immediately forthcoming and ready from the

simplicity with which its vast military machinery can be put in motion.

This corps stands in the same relation to the community in protecting the life and health of the people as does the National Guard and State Militia in guarding the property of the citizen, with this essential difference, that it is self-supporting and without entailing either upon national or state government the expense of equipment or maintenance.

The ravages of catastrophes, epidemics and famine are far more destructive to the welfare of a nation than any war ever was or can be, particularly in these days of our activity in the additional channels of infection, — our colonial possessions, — the Philippines, Cuba, Panama.

Let us hope that the Knights Hospitaler of old will live again in this brotherhood of scientific aid and relief as befitting this progressive twentieth century, and perils by land, and perils by sea, railway crashes, floods, conflagrations, earthquakes, volcanic eruptions, tornadoes, pestilence, famine and all other disasters will be shorn of half their horrors. From no other class of men is this blessing so likely to come as from the medical profession.

J. ADELPHI GOTTLIEB, M.A., M.D., LL.D.,
Surge-Maj.-Gen., *Commandant*,
Brig.-Gen. PERCIVAL KUTNER,
Paymaster-General,
Prof. NICHOLAS SENN, M.D., Ph.D., LL.D.,
President Advisory Medical Council.

Physicians, pharmacists, nurses and medical students are invited to become members, as it is desired to have representatives in every city and town.

Address all communications to

NAT. VOLUNTEER EMERGENCY-SERVICE MEDICAL
Corps,
Temporary Office, 225 West 106th St.,
New York City, U. S. A.

BRITISH MEDICAL ASSOCIATION.

As a supplement to the issue of the *British Medical Journal* for May 24 the general program of the meeting is given, which this year is held in Toronto, Canada, from Aug. 21 to 25. Sir James Barr is to deliver the address in medicine and Sir Victor Horsley the address in surgery. Under the heading "Hints for Travelers" the following suggestions are made, which might also be of use for those from the States who propose to visit Canada during the sessions.

For the Atlantic voyage a warm suit, warm underclothing, an overcoat and wraps will be required, and they may prove useful also on the lakes or on the mountains, but the British traveler is likely to find Canada in August warm (the average temperature for Toronto in August is said to be 66° F.) and the United States something more than warm. As there will be dinners and evening reception, as well as afternoon parties, dress appropriate to these occasions must be taken, but the high silk hat of European export is well best of place. There is a difficulty about getting boots cleaned in Canada, at Toronto during the meeting a "shoe shine colony" will be established in the grounds for the convenience of members, but it will be well to take a box of shoe polish for use in other places.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, MAY 26, 1906.

| CITIES. | Reported deaths in each. | Deaths under five years. | CITIES. | Reported deaths in each. | Deaths under five years. |
|-----------------------|-----------------------------|-----------------------------|-----------------------|-----------------------------|-----------------------------|
| New York | 1,430 | 459 | Quincy | 6 | 1 |
| Chicago | 580 | 163 | Waltham | 12 | 2 |
| Philadelphia | 519 | 143 | Gloicester | 9 | 1 |
| St. Louis | — | — | Pittsfield | 6 | 1 |
| Baltimore | 193 | 50 | Brockline | 4 | — |
| Cleveland | — | — | North Adams | 8 | 0 |
| Buffalo | — | — | Chicago | 10 | 5 |
| Pittsburg | — | — | Northampton | 7 | 0 |
| Cincinnati | — | — | Medford | 4 | — |
| Milwaukee | — | — | Beverly | 3 | 1 |
| Washington | — | — | Uxley Park | 2 | 1 |
| Providence | 71 | 22 | Newburyport | 9 | 1 |
| Boston | 214 | 60 | Leominster | — | 0 |
| Worcester | 26 | 10 | Melrose | 3 | 1 |
| Fall River | 34 | 14 | Woburn | — | — |
| Cambridge | 31 | 9 | Marlborough | 1 | 0 |
| Lowell | 36 | 10 | Westfield | 3 | 1 |
| Lynn | 20 | 6 | Pesabody | — | — |
| New Bedford | 28 | 9 | Revere | — | — |
| Springfield | 24 | 1 | Clinton | 12 | 0 |
| Lawrence | — | — | Attleboro | — | — |
| Somerville | 16 | 5 | Adams | 5 | 1 |
| Holyoke | 12 | 5 | Gardner | 1 | — |
| Brockton | 12 | 4 | Milford | — | — |
| Malden | 8 | 1 | Weymouth | 4 | 1 |
| Salem | 16 | 8 | Framingham | 2 | — |
| Chelsea | 14 | 4 | Watertown | 4 | 1 |
| Haverhill | 14 | 6 | Plymouth | — | — |
| Newton | 5 | 1 | Southbridge | 3 | — |
| Fitchburg | 8 | 3 | Wakefield | 2 | 1 |
| Taunton | 11 | 3 | Webster | — | — |
| Everett | 1 | — | | | |

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING MAY 30, 1906.

BLUE, RUPERT, passed assistant surgeon. Relieved from special temporary duty in San Francisco, Cal., and directed to proceed to Washington, reporting at Bureau. May 29, 1906.

AMESSE, J. W., passed assistant surgeon. Directed to proceed to Stapleton, N. Y., for special temporary duty, upon completion of which to rejoin station at Ellis Island, N. Y., May 24, 1906.

LOYD, B. J., passed assistant surgeon. Leave of absence granted Passed Assistant Surgeon Lloyd, for fifteen days from May 1, 1906, revoked. May 25, 1906.

LOYD, B. J., passed assistant surgeon. Relieved from duty at Guayaquil, Ecuador, and directed to proceed to Fort Stanton, N. Mex., for duty and assignment to quarters. April 30, 1906. Above order revoked May 26, 1906.

EBERT, H. G., assistant surgeon. Relieved from duty at Seattle, Wash., and assigned to duty on the U. S. Revenue Cutter "Perry." May 24, 1906.

PETTYJOHN, JOSEPH, assistant surgeon. Assigned to duty on the U. S. Revenue Cutter "Thetis." May 24, 1906.

FROST, W. H., assistant surgeon. Relieved from duty at Baltimore, Md., and assigned to duty on the U. S. Practice Ship "Chase." May 23, 1906.

KENNEDY, S. R. M., acting assistant surgeon. Granted leave of absence for four days from May 27, 1906. May 24, 1906.

RICE, W. E., acting assistant surgeon. Granted leave of absence for five days from June 2, 1906. May 25, 1906.

WATKINS, M. H., pharmacist. Relieved from temporary duty in San Francisco, Cal., and directed to rejoin station in Chicago. May 24, 1906.

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING JUNE 2, 1906.

J. H. IDEN, passed assistant surgeon. Detached from the Naval Hospital, Newport, R. I., and ordered to the "Columbia."

E. M. BROWN, passed assistant surgeon. Detached from the Naval Hospital, New York, N. Y., and ordered to duty in the department of government and sanitation, Ancon, Panama.

M. H. SIMONS, medical director. Detached from duty in command of the Naval Hospital, Mare Island, Cal., and ordered to duty in command of the Naval Hospital, Philadelphia, Pa.

R. C. PERSONS, medical director. Detached from duty in command of the Naval Hospital, Norfolk, Va., and ordered to duty in command of the Naval Hospital, Mare Island, Cal.

C. P. KINDLEBERGER, surgeon. Detached from the "Independence" and ordered to the Asiatic Station.

A. FARENHOLT, surgeon. Ordered to the "Independence."

A. E. LEE, assistant surgeon. Appointed assistant surgeon, with rank of lieutenant (junior grade), from May 9, 1906.

H. L. DOLLARD, acting assistant surgeon. Appointed acting assistant surgeon from May 26, 1906.

SOCIETY NOTICES.

MASSACHUSETTS MEDICO-LEGAL SOCIETY.—The annual meeting of the Society will be held on Tuesday, June 12, at 1 o'clock P.M., at Sprague Hall of the Boston Medical Library, 8 The Fenway. Business: Election of officers. The following papers will be read: "Criminal Abortion; Perforation of the uterus with passage of the fetus into the abdominal cavity, and prolapse of the intestine; Death; Disembowelment," Dr. Francis A. Harris, Prof. William T. Whitney, "Air Embolism," Dr. Frank Holyoke, "The Chinaman Murder," Dr. H. M. Dudley. The annual lunch will precede the meeting. FRED E. JONES, Recording Secretary.

QUINCY, MASS.

AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION.—The annual meeting of the American Medico-Psychological Association will be held in Boston, at the Hotel Vendome, June 12-15. Physicians of Boston and vicinity are cordially invited to attend the meetings.

GEORGE T. TUTTLE, M.D.,

Chairman of Committee of Arrangements.

RECENT DEATH.

HALL CURTIS, M.D., M.M.S.S., of Boston, died at Beverly Farms, June 1, 1906, aged seventy-one years.

BOOKS AND PAMPHLETS RECEIVED.

Ministero della Marina. Ufficio Sanitario. Statistica Sanitaria dell' Armata per Gli Anni 1899 e 1900. Roma. 1906.

A Clinical Lecture on Malignant and Non-Malignant Growths. By William Seaman Bainbridge, A.M., M.D. Reprint.

Supplementary Essays on the Cause and Prevention of Dental Caries. By J. Sim Wallace, M.D., D.Sc., L.D.S. London: Baillière, Tindall & Cox. 1906.

Twenty-third Annual Report of the State Charities Aid Association. New York City. 1905.

Thirty-fifth Annual Report of the Trustees of the City Hospital of the City of Worcester, for year ending Nov. 30, 1905.

Osteopathy. By Douglas Graham, M.D. Reprint.

Consumption. Its Relation to Man and His Civilization. Its Prevention and Cure. By John Bessner Huber, A.M., M.D. Illustrated. Philadelphia and London: J. B. Lippincott Co. 1906.

Modern Surgical Technique in Its Relation to Operations and Wound-Treatment. By C. Yelverton Pearson, M.D., M.Ch., F.R.C.S. Illustrated. New York: William Wood & Co. 1906.

Studies from the Department of Pathology of the College of Physicians and Surgeons, Columbia University, N. Y. Vol. X. For the Collegiate Year 1904-1905. Reprints.

The Diseases of the Nose and Its Accessory Sinuses. By H. Lambert Lack, M.D. (Lond.), F.R.C.S. Illustrated. London, New York and Bombay: Longmans, Green, & Co. 1906.

Biennial Report of the Department of Health of the City of Chicago for the Years 1904-1905.

Handbook of Surgery. By George Burnside Buchanan, B.A. (Cantab.), M.B., C.M., F.F.P.S. (Glasg.) New York: William Wood & Co. 1906.

The Practitioner's Library. The Practice of Gynecology. In Original Contributions by American Authors. Edited by J. Wesley Boyce, M.D. Illustrated. Philadelphia and New York: Lea Brothers & Co. 1906.

La Question Sexuelle Exposée aux Adultes cultivés. Par Auguste Forel. Paris. 1906.

Treasury Department. Public Health and Marine-Hospital Service of the United States. Hygienic Laboratory. Bulletin No. 29. A Study of the Cause of Sudden Death following the Injection of Horse Serum. By M. J. Rosenan and John F. Anderson. Washington. 1906.

Address.

THE MEDICAL PROFESSION AND THE ISSUES WHICH CONFRONT IT.

BY WILLIAM J. MAYO, A.M., M.D., HON. FRANK EDEN, ROCHESTER, MINN.

PRESIDENT'S ADDRESS AT THE FIFTY-SEVENTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION AT BOSTON, JUNE 5-8, 1906.

THE American Medical Association begins its fifty-seventh annual session under the most auspicious circumstances. After an interval of forty-one years it again meets in Boston, the guest of this great commonwealth which has ably upheld the highest medical traditions since the founding of New England.

Another cause of febrile stimulation: The sectional differences in New York have been overcome and the Empire State, for the first time in twenty-five years, presents a unified delegation.

The House of Delegates of the American Medical Association (which technically is the American Medical Association) represents directly about 55,000 and indirectly the 120,000 regular practitioners of medicine in the United States. The official organ, *The Journal*, reaches each week over 43,000 subscribers, and, under the able editorship of Dr. George H. Simmons, has become the leading professional magazine in the world.

The medical profession is to be congratulated on these evidences of a useful organization, but much remains to be done. In his individual capacity the medical man has not been found wanting. Go where you will in civilized lands, you will find the physician self-sacrificing, patient and charitable, upholding the honor and dignity of his noble calling. Collectively, medical men do not have the influence which we might expect and without which great movements for the welfare of humanity cannot be carried on. A lack of unity has prevented a realization of our hopes, and if we are to gain and maintain the pre-eminent position to which we are entitled we must unite for the common good.

The present organization of the American Medical Association is but a beginning; we must further the interests of this body unselfishly, not for ourselves alone, but that we may better fulfill our sacred obligations to mankind. The people must be educated up to a point where they can understand the broad humanitarianism of modern medicine. Society appreciates the saving of a sick person's life by the skilled physician, but fails to see the priceless gifts to the human race made by preventive medicine and sanitary science. It views every thing in detail and misses the perspective. We have failed to secure the support of the mass of the people to much-needed sanitary reforms, because we have appealed to them as one individual to another without the weight of an authoritative organization.

That the people are ignorant of medical affairs is due to bad education rather than prejudice.

They are more than two decades behind advanced medical thought; it is our duty to keep them better informed. The theory of medicine did not contain the essential principles of a science until within the last quarter of a century. Originally a part of priestcraft, the profession had its beginnings in a time of mysticism and superstition. Anatomy, gross pathology and chemistry were among the early foundation stones which made progress possible. Clinical treatment was based on a very few specific remedies and a considerable number of drugs of proved value in the cure or alleviation of disease. But, lacking a sound theory of causation, the results were not much better in the average self-limited malady than those claimed by the various "systems" based on the giving of inert or useless remedies which, like the incantation of the Indian medicine man, kept the patient and friends interested until cure came about through natural processes. The public found that the large majority of sick persons got well under any, all or no treatment, and, not rightly understanding the reason, have never been able to comprehend why one method or form of treatment, as long as it apparently yielded about the same average of results, was not as good as another.

The germ theory promulgated by Pasteur and given surgical significance by Lister, strengthened our foundation by adding to it the long-sought-for causation of the majority of diseases, and this, with the aid of experimental research, has led the practice of medicine out of the wilderness and established it as one of the exact sciences.

New and fundamental truths have followed each other so rapidly that we have scarcely been able to digest them and much less can we expect the public to have kept pace. The layman's view is that of twenty-five years ago. He accepts with avidity new dogmas and "paths" based on theories miserably foolish in the light of modern investigation and we have allowed him to become fixed in these beliefs. We have permitted the public to be educated by "patent medicine" advertisements and the voluble charlatanism of the commercially interested. In return we are classed with these schemers, and efforts for the general good are believed to be selfishly inspired.

The Utopianism of our profession is too idealistic for ready comprehension in this commercial age. The time has come for the public to be taken into our confidence. If we wish better results we must enlighten the people for with them lies the final word.

THE PROFESSION AND THE PEOPLE

General sanitary matters of the greatest importance are becoming understood through medical influences. The public has been and is being educated in regard to the great white plague, tuberculosis, and statistics are beginning to show the effect of this diffusion of knowledge. In Massachusetts and some other states a committee has been appointed in each district to

promulgate measures for the relief and control of tuberculosis. This should be imitated in every state in the Union.

We can already see the good which has resulted from the teaching of the habits of mosquitoes, the short distances they travel from their breeding places, and especially the necessity for the quarantine of patients afflicted with yellow fever and malaria, not directly to protect mankind, but to prevent infection of the little pests who act as carriers of the contagious micro-organisms.

Society must be taught the early symptoms of cancer, the greatest foe of humanity, that its manifestations may be recognized while in the curable period. A propaganda of this kind, inaugurated by the profession of Germany, has borne fruit.

The typhoid fever crime of cities through polluted water-supply is not the least of the many branches of popular education. There is no reason why a man who has become infected with typhoid from a city's neglect should not sue for damages as he would for personal injury sustained from falling through a defective sidewalk. Unavoidable sickness is bad enough, but when we stop to consider that the life of the individual is worth \$5,000 to the state, and that those who recover undergo great disability and expense, the continuance of unsanitary conditions is criminal. The experience of Vienna, which was converted from a typhoid center to one of freedom from such outbreaks by bringing in a pure water supply, has now been repeated over and over again in every civilized land. Yet hundreds of deaths from this preventable source yearly attest that the lesson has not yet been learned.

How can the work of education be best continued? The answer, as shown by our very efficient chairman of the Committee on Organization, Dr. J. N. McCormack, is through the local society. Occasional meetings to which the public shall be invited must be devoted to questions of general interest, and the proceedings published in the local newspapers. The county society must become the unit, and the allied professions of pharmacy and dentistry urged to attend and take part in the deliberations.

To the *Ladies' Home Journal* and *Collier's Weekly* the public owe the successful crusade against poisonous substances and intoxicating beverages which are sold under the guise of "patent medicines," patent only in the sense that the name is copyrighted; the constituents can be changed at any time and in any way.

Do you think that our American mothers will continue to give "Kopp's Baby Friend" and "Mother Winslow's Soothing Syrup" to their babes when they find that these mixtures contain opium and that instead of securing rest the little ones are narcotized and that many deaths are directly attributable to this cause?

Will the American people continue to use bromo seltzer and similar dangerous preparations to an extent which causes them to exhibit blueness of the skin surfaces from poisonous coal-tar products, or become victims of drug

habits from cocaine catarrh cures, when they discover the harmful and dangerous character of these agents?

Will our prominent people, statesmen, politicians, ministers and ladies of note continue to allow their photographs over signed testimonials to be published, telling their fellow-citizens how much better they have felt after taking Peruna, Warner's Safe Cure and the various nervines and tonics, when they find that most of these preparations depend on alcohol for the stimulating effects which they describe? The success of most "patent medicines" depends on the fact that they contain drugs and stimulants which create a craving and must be repeated. Once get the public conscience awakened and we will have a demand that every "patent medicine," before being sold, shall have its exact component parts printed on its label, and its claims to cure verified by scientific investigation. The action of the Postoffice Department in denying the use of the mail service to some of the worst offenders against common decency is to be commended.

PUBLIC HEALTH LEGISLATION.

One of the few misfortunes of the individual freedom afforded by a republican form of government is that it enables the most ignorant man, through prejudice, to interfere with and delay needed legislation, with the result that, by the time the law can be passed, the immediate object to be obtained has often disappeared.

In Germany compulsory vaccination has practically caused smallpox to disappear from the army and country, a person properly protected being immune. In the state of Minnesota inability to enforce vaccination in the late smallpox epidemic permitted, from a few sources, 27,876 persons to become infected with this disorder; all due to a small but vociferous band of anti-vaccination agitators.

Contagious disease in any place is not a matter of local or state interest alone, as the ease and freedom of transportation render local control impracticable and properly place it in the hands of the general government.

The keenness with which the American people are watching the affairs at Panama argues well for the future. The communication of Dr. Charles A. L. Reed awakened public interest. His portrayal of red tape and obstruction to sanitation in the Canal Zone has resulted in obtaining for that most able army medical officer, Colonel Gorgas, power to carry out the necessary reforms and has made the Canal Zone the most sanitary place in Latin America.

Compare our record in the Spanish-American War with that of the Japanese in the war with Russia. We had 14 deaths from disease to 1 from wounds, and more than 95% due to disregard of the simplest problems in sanitation—therefore, unnecessary and avoidable. In the Japanese army there were 4 deaths from wounds to 1 from disease, a difference of 56 to 1. This was not due to the fact that the Japanese had superior knowledge, but that their medical

officers were thoroughly organized and in sanitary matters were supreme. The knowledge which they used was obtained in western institutions and was the product of the Occidental, not the Oriental, civilization.

The army and navy medical departments have worked intelligently against overwhelming odds. Their individual members have international reputations honestly achieved. Their schools for the special training of their men are in the highest degree efficient and deserving of every praise; but the departments have been so small as to be unable to act even as nuclei about which in time of war competent forces could be gathered, and the militia of our country enter into conflict fearfully handicapped. The indications, however, are that these matters will now be rectified, and if so it will guarantee to the patriotic American that should he again be called on to serve his country his enemies would be in front and that he will not be destroyed by his own side through neglect of sanitary laws.

The United States Public Health and Marine-Hospital Service has been and is doing splendid work in sanitation. Its skilled investigators have revolutionized quarantine measures and have placed preventive medicine on a solid basis. Their powers should be extended so that such unnecessary outbreaks as occurred in New Orleans shall not be repeated. They should be given control of national quarantine in all its phases.

MEDICAL EDUCATION, STATE LICENSURE AND RECIPROCIITY

What is needed is a higher standard of requirements and more and better supervision of professional schools. The Council on Medical Education is working hard and is now in a position not only to show what should be done, but to initiate needed reforms. No more important work has ever been taken up by the profession. At the present time medical education is uncontrolled and each state has its own standard of requirements. We cannot rid ourselves of dogmas and "pathys" until we can secure a universal primary law as to the minimum amount of knowledge on fundamental branches. To accomplish this the American Medical Association must co-operate with and encourage medical colleges to do better work. The profession owes it to itself to investigate in some manner what the schools are actually doing and to make it known whether or not they fulfill their obligations to the student. No well-conducted college could object to such reasonable supervision.

Another question of great importance is that of reciprocity in medical license. The conditions now are well-nigh intolerable and restrain the individual freedom guaranteed by the Constitution. The boundaries between states are imaginary lines; yet a physician on one side of a border cannot relieve human suffering on the opposite side without becoming amenable to the law or subjecting himself to vexatious examinations which he has already successfully passed

in his own state. This must be met and speedily by agreement between examining boards as to the minimum of requirements. After all, this is but a part of the educational problem. If we could solve this, licensing boards could at once adopt more uniform examinations and reciprocity.

RELATIONS TO INSURANCE COMPANIES, CORPORATIONS, ETC.

We come now to consider some abuses from which the physician suffers. It is a matter of professional pride that, in the general condemnation of the life insurance companies, although every other part of the control has been shown to be corrupt, no breath of scandal has touched the medical department. Yet the local examiner has the most cause of all to be dissatisfied. The New York Life, some years ago, cut the fee for examination 40%, apparently not as a matter of economy, for at that time the most corrupt practices existed, but rather to enable the agent more easily to pass "new business" at any cost. This action has lately been imitated by the Equitable and some others and has resulted in forcing the resignation of many of their best examiners. The general officers have taken great credit on themselves for voluntarily reducing their salaries 20%. It is a rank injustice that the one body of men who have emerged clean from the insurance scandals should suffer the most for the crimes of others. A thorough medical examination to prevent fraud by the admission of unsafe risks is essential. With few exceptions the line companies pay a fair fee and less should not be accepted. The casualty companies, such as the Maryland, are the worst offenders, and some concerted action should be taken to compel them to mend their evil ways.

Lodge practice is another scheme by which officers of an association draw salaries ostensibly to give medical services at a figure below the possible point at which a professional man can live and continue his education. The people are badly served, as competent physicians cannot be secured to do the work, and the whole scheme is properly condemned by the various medical associations all over the country.

Public service corporations abuse hospital privileges in a way that is no more nor less than an open scandal. In Pittsburg the steel companies pay \$100 a day for the care of their injured men at the hospitals, and for the class of patients under discussion this cannot be provided for less than \$1.00 per day. The companies pay the surgeons at the hospitals absolutely nothing for their service to its injured, which amounts to thousands of dollars a year. The same condition exists with many of the large railroad and street car companies and other public corporations.

Hospital abuse by patients who are able to pay, through the neglect and indifference of the trustees is prevalent and thereby the profession is robbed of just returns for labor and the funds of charitable persons misused to an extent which

is almost beyond belief. All hospitals should have competent individuals whose business it is to see that no one secures free treatment who is able to pay.

Some great hospitals go still further and receive any patient, rich or poor, allow him to have a suite of rooms and bath and several nurses if he can pay for the same; but will not allow him, even if he is willing to do so, to pay the surgeon who operates on or the medical man who takes care of him. If the patient is disposed to be more just than the trustees of the hospital, he can do so only by giving a gratuity at Christmas, as would be done with a servant. Such indignity should be resented by every right-feeling man.

It is a misfortune that the large majority of hospitals have not physicians among their directors. Hospital management is often extravagant and wasteful, due to official influence in furnishing comfortable berths for incompetent relatives or unfortunate friends in some salaried executive position.

Fortunately the list of grievances is not large, and I believe that they can be harmoniously adjusted if taken up with the proper authorities in a conciliatory spirit. Our first object must be to see that no poor person shall be subjected to the slightest inconvenience or annoyance and that every worthy charity shall have our united support; but we must look to it that the charitable practitioner's time, knowledge and skill shall not be misused.

THE PRACTICE OF MEDICINE AS A BUSINESS.

It is a hard matter to adjust the financial side of the practice of medicine; that doctors are poor collectors and bad investors is a notorious fact and makes them the easy prey of the various investment "gold bricks." A physician owes it to himself, to his family, to his profession, and especially to the community at large, to manage his finances well. Otherwise he cannot pursue his studies and give to the sick his best efforts, which they have a right to expect and demand. No sensible man enters on a medical career with a view of making money. I have never known a physician who has become rich solely from this source, and it is better so, for beyond that reasonable competence which leaves him free to pursue his life work the care of money interferes with the highest aims of the true physician, and few who have been burdened with wealth have reached their ideal in a calling which makes no distinction between the rich and the poor.

One of the demoralizing tendencies in this commercial age is the money standard of success. Physicians are not called or chosen; accident or environment brings about their choice of profession. While professional life broadens the mental horizon and increases sympathy, it cannot change man's nature, and men who are unfair in business affairs are to be found in our midst.

The one crying evil, which fortunately is not widespread, is the giving of commissions—in other words, the selling of the confidence which the patient has in his practitioner—to some

specialist who will divide the fee in return for reference of the case. The one secretly takes money from the patient without his consent, and the other, in order to complete the bargain, charges more than he should. This is equally harmful to the one who receives and to the one who gives. Such matters cannot be kept secret, and I have personal knowledge of men of good attainments and remunerative practice who have been ruined through losing the confidence of their communities by this pernicious traffic. Some attempts have been made to justify it, but the very fact that it is secret shows that both parties are ashamed to have it known and is an acknowledgment of its moral obliquity.

Our relations with the allied profession of pharmacy are not on as ethical a footing as they were twenty years ago. Then the druggist was the faithful friend of the physician. To-day, in putting up from 50% to 60% of the prescriptions sent to him, the educated pharmacist cannot use his skill as a chemist, but simply acts as a distributor of copyrighted preparations which the physician calls for a few times only to take up with something new and leave the shelves of the druggist filled with the unused remnants.

Many physicians compound their own prescriptions, to the detriment of the pharmacist. The proprietary medicine people have managed this very cleverly; to the medical profession they are continuously calling out that the druggist is "substituting"; with one hand they have given the physician remedies to dispense himself, and with the other furnished the druggist with "patent medicines" with which to compete with the physician, and these two natural allies have drifted apart. The average pharmacist cannot live on physicians' prescriptions alone, but he should be treated justly, and both physician and druggist would profit by mutual concessions to the great benefit of the public.

The higher grade of pharmaceutical houses already see the danger to honest pharmacy in the forced promotion of "ethical" and fake nostrums under catchy names, and it is to be hoped in the future will confine themselves to the open compounding of legitimate preparations; and these and these only should be found on the advertising pages of reputable medical journals.

MEDICAL PROGRESS.

Graduation from a college is merely a commencement of a life study of medicine. Therefore, young men without special training under competent teachers should not be encouraged in wanton assaults on major surgical diseases unless justified by necessity. The future will demand schools for advanced training for those who desire to do special work.

The recent graduate in medicine should begin in his county society by contributions to the newer methods which will be interesting to the older men. This should be his kindergarten; from there he will carry his papers to the district meetings; and at the end of five years he will be competent to bring useful material to the

state society and later to the sections of the American Medical Association.

In the practice of medicine the student days are never over. There is so much to be learned that a long and industrious life leaves one with the feeling that he is but a beginner. The most important habit a young physician can form is the "daily study habit." Let him put in even one hour a day with the reading of journals and books of reference and much can be accomplished. He should keep an account of the time, and if something interferes for a day he should charge himself up with it. A two weeks' vacation means fourteen hours to be made up. Most men can do more, and no man has a right to do less, no matter how busy he may be. The leaders in our profession make a daily average of five or six times this amount of study the year round, in addition to the demands of an active practice.

The practitioner must make frequent trips away for the purpose of observation. In no other way can he avoid the rut of self-satisfied content, which checks advancement and limits usefulness. No amount of diligence as a student can take the place of personal contact with men in the same line of work.

What are the rewards of so laborious a life? They cannot be measured, because there is no standard of comparison. To realize that one has devoted himself to the most holy of all callings, that without thought of reward he has alleviated the sufferings of the sick and added to the length and usefulness of human life, is a source of satisfaction which money cannot buy. I know many a man grown gray in the profession with little of a tangible nature to show as a result of his work, but who is not only contented with his lot, but proud to have served in the ranks, and who looks back on a life of privation and hardship for the benefit of humanity as a privilege which he is thankful has been vouchsafed him.

Let us continue to strive as individuals for the honor and dignity of our profession. In this we but follow out the aims and ideals of those who have gone before and prepared the way. But the great movements of the future cannot be brought about by individual action. They must be initiated and controlled by united effort, and in no other way can the epoch making truths of preventive medicine be made to bear fruit. Unity is the spirit of the times; it marks the difference between the old and the new.

The vital need of the medical profession is a harmonious organization—an organization that will encourage right thinking and good usage among ourselves, help to secure needed medical reforms, compel redress of grievances and promote and encourage the highest interests of its individual members, and in this lies the future usefulness of our profession as a whole.

Original Articles.

THE HYPEREMIA TREATMENT OF CONGESTED AND INFLAMED TISSUES.*

BY R. H. BRADFORD, M.D., BOSTON.

ANYONE whose attention has been called to the recent literature of the subject will have noticed the frequent reference made in German medical journals to the hyperemia treatment of chronic inflammatory conditions, and even to some of the more acute forms of tissue inflammation. The reported cases are presented as demonstrating the efficacy of a new method of treatment which is claimed to be of value in a variety of disorders.

When a method is credibly reported to be generally and successfully applied in so great a range of affections as ulceration of the cornea, cervical endometritis, gonorrhea, tuberculous joints, furunculosis and eczema, it deserves more attention than has been accorded to it in American literature.

In this country attention has for some time been directed toward the hot air treatment of swollen joints, which, with some elaboration and expense in outlay, has been used for the last few years; but the general medical profession has been more inclined to regard this as a manner of treatment to be classed with hydrotherapeutics and massage, rather than to consider that it contains a new principle of therapeutics. In Germany, however, the hyperemia treatment appears to be regarded as almost a new medical dispensation. The principles of the treatment which have been recently ably presented and advocated by Professor Bier of Bonn, though not absolutely new, are not, however, to be regarded as a revival of the old method of counter-irritation by blisters, by setons or the cautery, but are based upon a more rational hypothesis consisting of an attempt to combat certain stages of inflammation by increasing the amount of blood in the tissues.

In the earlier days counter-irritation was employed by surgical theorists for the purpose of drawing the peculant humour from the tissues. With the decadence of the humoral pathology a system of treatment directed toward combating congestion by the application of cold and compression, inducing anemia, became almost universal. Bier claims that under certain conditions the true antiphlogistic is not induced by anemia, but on the contrary, by increasing rather than diminishing the amount of blood in the affected parts. Where degenerative changes are taking place, these are assisted or checked by an increased amount of blood in the tissues. It is manifest that this hyperemia treatment is not applicable to all stages of inflammation, but this may be equally true in regard to the treatment by anemia.

Taking it for granted that the theoretical reason for supporting the hyperemia treatment

TRAINED NURSES FOR THE PHILADELPHIA PUBLIC SCHOOLS.—The Board of Education has advocated the employment of a number of trained nurses for work in the public schools. *N. Y. Medical Journal*.

* Read at meeting of the Boston Medical Library, April 11, 1906.

may be sound, the question of its application and practicability is of importance. The most simple method of producing thorough hyperemia is the application of dry heat. The usual methods of the application of moist heat do not permit evaporation nor excrete perspiration, and although they furnish means affording relief, as has been shown by poultices, hot cloths, the application of Denver mud, etc., yet where the perspiration is prompted rather than checked, a greater amount of heat can be employed with benefit; this constitutes the Bier method of active hyperemia, which consists in surrounding the affected parts by a chamber of hot, dry air.

This method has been much elaborated, but as used in the Bonn clinic it is to be seen in its simplest as well as most efficient form. It is evident that where the heat is prevented from radiating rapidly, the tissues can be treated by the application of a much lower heat. It is therefore essential that the chamber surrounding the joint should be made of a material which does not permit rapid radiation. It is also advisable that the arrangement employed should be portable and cheap, and that the heat should be under careful regulation. It is for this reason that a light wooden box is preferable to the heavy and expensive appliances which have been furnished by many instrument makers. Electricity has been utilized as a means of furnishing a heat without the danger of inflammability, but electrical heat is not as easily regulated as that given from a Bunsen burner.

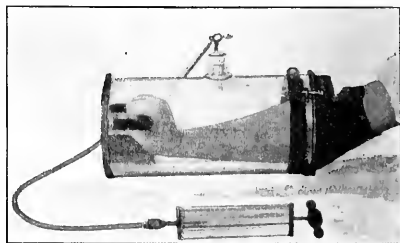
The advantages of the method of active hyperemia have been shown in many well-recorded cases, but in certain instances no benefit has been derived from its application, and it is for these that the method of passive hyperemia has been recommended.

By passive hyperemia is meant increasing the amount of blood in the tissues without increasing the arterial flow. This is accomplished by constricting the limb above the point affected, and can be done most simply by placing an ordinary elastic bandage around the limb, and retaining this moderate constriction for a sufficiently long time to congest the tissues.

Practical experience has shown that better results are obtained where this constriction is applied for a comparatively long time as a moderate amount of pressure than where constriction to a great degree is applied for a short time. It is not desirable that the limb should be made cold, or that the limb should lose its reddish color.

This method should not be applied except under the direct eye of the surgeon, and the degree and duration of constriction are matters of judgment in each individual case. Where the hip and shoulder joints are involved, constriction can be applied by placing an elastic band in the groin and in the axilla, and retaining it by cross straps around the trunk. Congestion of the tissues of the head is brought about by a moderate amount of constriction applied to the neck.

A still further application of this congestive method is afforded by the method of suction hyperemia, which is perhaps suggested by the old method of vacuum treatment, or perhaps earlier by the method of cupping. As applied at present, the limb is placed in a glass cylinder with the open portions furnished with flexible rubber cylinders which are bound upon the limb, preventing the entrance of air. Suction is applied to the contained air by means of an



ordinary pump, and in this way not only is a slight amount of constriction furnished to the limb by the pressure of the rubber fabric preventing the increase of air, but congestion is increased by the attenuated air chamber surrounding the part. Where portions of the body are to be treated which cannot be incased in the cylinders, cupping glasses of various shapes can be applied.

Anyone who has had experience with this suction method can testify that it appears to be of advantage in ways which are not furnished by the application of heat. Patients will express a sense of relief from its application. The perspiration is increased during the application of suction, and benefit in the flexibility of the joints and in the circulation of the tissues follows.

The three varieties of application of the hyperemia treatment are considered as applicable to different conditions. The suction hyperemia is especially applicable to brawny and septicly congested tissues, as is seen in cellulitis, phlegmons, etc. The constriction hyperemia is applicable to the less virulent infections, as those of tuberculosis, and especially of benefit in blennorrhagic joints, while the active hyperemia is more applicable to what may be termed the less active forms of inflammation as in arthritis nodosa.

In reviewing the evidence which has been presented in the literature, the critic naturally queries as to what the method of treatment by hyperemia actually accomplishes. How much may be regarded as fact, and how much as fancy. Is there an underlying scientific truth which can be utilized, and are the supporting clinical facts carefully reported, and are these methods in reality of more value than a varied application of the cupping glass and blood-letting of our predecessors?

To anyone who has tried the methods it is clear, however, that the hyperemia method of

treatment in its various forms of application furnishes to the surgeon important means of increasing the flow of blood to the skin, and to the deeper tissues. With it we can stimulate the circulation more easily than by previous methods but it is not yet proved whether heat can act in any other way than a stimulation to the circulation. It has been suggested that sluggishness of the lymph circulation may be overcome by suction, and it is even possible that by the application of slow heat for a length of time cell

disappeared from the tissues as if washed away by the congestion induced. He thinks that it is probable that the bacteria and other toxins have also been influenced in the same way. But it is evident that much more thorough investigations than have yet been undertaken are needed before the method has been brought to a sound scientific basis.

Improvements in the methods of application of active hyperemia and dry heat are needed. It is desirable to furnish the cheapest, most



activity may be promoted or in other words, that the chemistry of the living tissues may be changed by a process which may be called a cooking by a slow fire.

It is not improbable that the action of the lymphatics may be altered by suction, but in order to determine these facts further physiological investigations are of importance. Some investigations, which have been made at the clinical laboratory of the Children's Hospital by Drs. Low and Z. Adams, were undertaken with a view of determining more carefully the changes made in the tissues by the methods under consideration, and although these results have not yet been published, I am permitted by the kindness of these gentlemen to report that there can be no doubt of the dilatation of the smaller vessels produced by suction, heat and constriction.

Hofman in the *Monatsschrift, Wechselkraft*, Sept. 26, 1905, claims that the lymphatics have

portable, efficient appliances for this purpose. Experiments in regard to this matter are now being conducted at the Children's Hospital under the direction of Dr. Z. Adams which has succeeded in constructing a box, where practically no radiant heat is given.

If the hyperemia treatment is of value, it is, of course, probable that the methods at present employed may be improved upon. Active hyperemia, that is to say, the method of active hyperemia, is not a new thing, and has been often employed, and it is also possible to deliberately stop it, as in the case of a cold, by fresh air, and to the extent of attracted air.

The former of these has been attempted by Dr. John A. Lee of Boston, and the latter one of them with hyperemia has been done by Dr. Monks of the Boston City Hospital.

It is probable also that a combination of these methods of treatment with the other therapeutic methods, such as massage with the rubber, may be bene-

ficial if judiciously used. The hyperemia treatment is naturally aided by massage, vibration and electrical irritation.

In brief, it may be said that the hyperemia treatment of congested tissues is not only one which deserves careful investigation, but may be regarded as undoubtedly deserving an assured position in the treatment of certain affections which are not readily amenable to the methods previously used.

SANITARY AND MORAL PROPHYLAXIS.*

BY PRINCE A. MORROW, A.M., M.D., NEW YORK.

I wish to express my appreciation of the honor of being invited to appear before this society and my sense of great personal gratification that the subject appointed for this evening's discussion is one in which I have long been interested.

Preventive medicine presents no more pressing problem at the present day than the prophylaxis of a class of diseases which have such important relations to the public health, the welfare of the family and the interests of society.

The advances made in our knowledge of the pathology of venereal diseases within recent years have singularly amplified our conception of their danger to the public health, and especially their significance as a social danger from their morbid irradiations into family and social life.

Venereal diseases from their nature and mode of communication are the most essentially human of all diseases; they enter into the most intimate and sacred of human relations; they contaminate the very sources of life itself; they are the only diseases transmitted in full virulence to the offspring — destroying the productivity and sapping the vitality and vigor of the race.

The prophylaxis of these diseases has long been recognized as the most difficult and delicate of all the problems of social hygiene. Certainly its satisfactory solution would represent the greatest possible benefit that preventive medicine could render humanity.

We may first inquire does sanitary and moral prophylaxis offer such solution? Can this problem be worked out along the lines indicated in this scheme of prevention? Upon this point, it will be admitted that there is a pronounced skepticism on the part of many members of the medical profession. A similar skepticism was manifest a few years ago in regard to the prevention of many infectious diseases which have since been brought under control. The present era of preventive medicine has been marked by a singular aggressiveness on the part of sanitary science in attacking communicable diseases which had hitherto defied control. Perhaps its most notable achievement is the successful crusade now being waged against the "great white plague," but before the "great black plague" it has paused irresolute, baffled and beaten back. It sees no clear way in which this pestilence, entrenched in the stronghold of pri-

vacy, wearing the defensive armor of shame and secrecy and protected by social sentiment as well as by professional ethics, may be reached by the strong hand of official repression. Notification, the first and most essential condition of sanitary control, does not appear practicable; here the medical secret dominates the situation.

The problem of prevention is rendered especially difficult by the exceedingly complicated character of its factors. Many of these factors are purely social and lie entirely without the sphere of sanitary control; it is evident that medical measures must be supplemented and reinforced by influences and agencies which can more effectively intervene in the correction of the causes of these diseases and the conditions under which they are spread; especially must they be adapted to their peculiar nature and communicative mode.

One distinctive peculiarity of venereal diseases is that they are commonly contracted and communicated by the voluntary acts of individuals, but we cannot draw a sharp line of distinction between *voluntary* infections and *ignorant* infections. No man voluntarily exposes himself to tuberculosis, but thousands of individuals expose themselves and infect others through ignorance; and it was to correct this ignorance that a campaign of education was inaugurated in the warfare against tuberculosis. The same is true of venereal infections; the vast majority of young men expose themselves ignorantly; men carry disease and death into their families through ignorance. It is the duty of the medical profession to enlighten them — to let them know to what they expose themselves, and especially to let them know that the introduction of these diseases into marriage has, upon their dependents and future generations, all the consequences of crime. There are, however, peculiar difficulties in the way of this prophylactic education which will be presently referred to.

Experience in dealing with tuberculosis and other communicable diseases has shown that the primary and most essential condition of success is the creation of public sentiment by awakening the perceptions of the general public to an appreciation of the nature and extent of their dangers. The public must comprehend the value as well as its need of prophylaxis. Publicity, which has proven to be the mightiest of all modern agencies in the correction of political, public and commercial evils, is a no less potent factor in the correction of social ills.

It is especially needful that the light of publicity should be turned upon a class of diseases which infect unseen the social body, which aptly typify "the pestilence that walketh in darkness," and whose ravages, especially the havoc wrought in the home and family, have always been covered up and concealed.

This can be most effectively done along the lines indicated in this evening's program, by exposing the grave dangers to health from venereal infection, the economic and social

* Read before the Philadelphia County Medical Society, March 28, 1906.

interests involved — and especially the dangers to the family, by appealing to that humanitarian instinct which prompts protection to the innocent and helpless members of society.

Such knowledge carries with it responsibility — a responsibility on the part of the medical profession which should find expression in an organized effort to educate the community, and when this knowledge is shared with the people, it will create a resulting responsibility on the part of an enlightened public to aid and co-operate in this prophylactic work. I may be permitted to hope that the outcome of this evening's discussion will be the formation of a society of sanitary and moral prophylaxis in this city, and I feel that I cannot more profitably employ the remainder of the time allotted me than in recounting the experimental work done by a similar society organized in New York some twelve months ago.

I speak of this work as experimental because it constituted an innovation, an exploration into a field hitherto neglected. It was evident that this work could not be undertaken from the hygienic side alone, — moral as well as socio-economic conditions are involved. The evil is composite in its causes and to be successfully combatted the co-operative efforts of different social groups is required. The society was, therefore, to be composite in character, embracing in its membership medical men, representatives of the clergy, the law, public educators, sociologists and public-spirited citizens interested in the social welfare.

It appeared that there were several lines of effort along which this prophylactic work might be profitably directed, — educational and moral prophylaxis, prophylaxis by treatment and social prophylaxis.

Since the foundation of all effective work must be the education of the public, it was decided to begin this work along educational lines.

First of all it was necessary to study the situation, to take our bearings, so to speak, before this unexplored forest of public ignorance. It was decided that the meetings for the first year should be a sort of continued educational symposium. A definite program was marked out in advance which has been strictly adhered to, taking up first the education of the youth of the country in sexual physiology and hygiene, studying the nature and scope of this instruction, the age at which it should be given, whether it should be progressive according to the age of the individual, through what agencies it should be given, — through parents, physicians or teachers; whether our educational centers, high schools and colleges, should be utilized for this purpose; whether the teaching of sexual physiology should be incorporated in textbooks of hygiene, etc.

Next was taken up the education of the young men and the young women of the working classes, — whether this should be individual or collective, through conferences, lectures, pamphlets, tracts, etc., and other means of enlightenment.

Next was considered the education of men of

the army and navy service; and finally that of the great body of the general public.

Returning now to a consideration of the practical application of this educational scheme, while it was easy enough to supply the requisite medical knowledge and even determine the nature and scope of the instruction to be given there was no provision in the organization of our educational system for its reception. It was necessary to have the co-operation of the teaching fraternity, who command the opportunities, and their advice as to the best ways and means of imparting this instruction. Recognizing that physicians are not specialists in pedagogy, we invited popular educators and practical pedagogists who were qualified by long experience and study to point out specific methods for carrying out this educational work.

In making provision for the education of the young men of the working classes it was obvious that a modification of methods was necessary. We were able to secure the benefit of the advice of instructors of physical training departments, the heads of settlements and workers with young men in various other social groups. The question of the education of young women of the working classes was submitted to women physicians for discussion.

In the matter of educating men of the army and navy service the co-operation of the national government was solicited. The society was assured through the Secretary of War of the thorough sympathy of his department with this work and its co-operation in every way possible.

As an earnest of this assurance, the assistant surgeon general of the Army and the medical director of the Navy were especially detailed to present papers and discuss methods. The figures and illustrative charts presented at our last meeting showed that venereal diseases overshadowed all other diseases as a cause of admission to the hospital, disability and discharge from the army, constituting by far the largest factor in impairment of the efficiency of the service.

The next phase of our study was how to enlighten the great body of the general public as to the extent and dangers of venereal diseases and their modes of contagion, direct and indirect. This was recognized as perhaps the most important and yet the most difficult part of our program. However valuable or even vital, we may recognize the education of the young in the laws of life and sex, this question must be submitted to the high tribunal of parental approval for decision. It cannot be doubted, however that when the issue is fairly presented to parents, whether the ignorant and dissolute shall continue to have the exclusive monopoly of the education of their sons in sexual matters or whether this education shall be committed to competent teachers, the decision will be in favor of sound, sanative and wholesome knowledge, rather than the false vicious and dangerous teaching they now receive.

The chief difficulty of popular enlightenment

comes from the fact that the ordinary channels of communication with the public are closed to this knowledge.

The newspaper press which is the most powerful of all agencies in the hygienic education of the public is absolutely barred to the mention, even, of venereal disease. Many newspapers which do not hesitate to speak freely of prostitution, which lay bare disgusting details of private intrigues in language which conveys a distinct conception of an immoral act, yet shrink from mentioning the pathologic consequence of that act as something unprintable. A newspaper in New York which may be taken as representing the very best type of journalism, some time ago devoted a long editorial to the diseases of immorality in the army,—the percentage of infections and the great damage to the efficiency of the service caused by these diseases; and yet this same newspaper would on no account make mention of the extent and dangers of these diseases in civil life. I might refer in this connection to the fact that certain types of newspapers are the most powerful of all agencies in the dissemination of venereal diseases by printing quack advertisements which hold out deceptive promises of cure,—of gonorrhea in from three to ten days, of syphilis in from thirty to sixty days, leaving their dupes not only to suffer from the consequences of improper treatment, but to go on sowing broadcast the seeds of disease which might have been sterilized by scientific treatment. Whether this be false ethics or not we must accept it as newspaper ethics.

Fortunately the entering wedge which may serve to open up communication with the public has been found in the "Charities and Commons" whose editor has the courage and public spirit to disregard traditional prejudice and print the papers and discussions of our society. If this publication goes into the homes of thousands of the best men and women in this country without offense, but with commendation for this work, there is no reason why larger and still larger public groups may not be reached by this and other publications.

One word in regard to the moral feature of this prophylaxis: Diderot long ago said that every question of hygiene is a question of morality. We must all realize that the training of the morals of the young is no less important than the training of their intellects. Many physicians do not believe in the practical wisdom of "mixing morals with medicine," but venereal diseases are inextricably mixed with immorality by both human and divine law. In the prevention of these diseases hygiene and morality go hand in hand. Viewing the individual not merely as an animal but as a human being, possessed of both a physical body and a moral nature, we must recognize as of the highest order the preventive value of that moral teaching which comes more properly within the province of the clergy.

Assuming that the educational feature of our

program is susceptible of practical application, the Utopian idea is not indulged that educational and moral agencies will prove an infallible corrective of incontinence. It is confidently believed, however, that a vast number of ignorant and reckless exposures will be prevented and we have sufficient faith in the inherent good in human nature to believe that an enlightened public sentiment and an aroused public conscience will no longer tolerate that crowning infamy of our social life,—the infection of innocent wives and children.

The educational feature does not, however, represent the entire scope of this society's work. In addition to the committee on education we have a committee on treatment, a committee on "the social evil" and a committee on legislation, which indicate the directions in which this society's work is to be expanded.

The only work thus far done by the committee on legislation is the drafting and introduction into the legislature of a bill to prevent "quack advertisements" in the newspapers.

The committee on "the social evil" has not yet materialized, owing to the intrinsic difficulty of securing the men best fitted to undertake this work.

This society has been criticised by some physicians for the adoption of a policy which excludes regimentation from its scheme of work. The failure of this system abroad in materially decreasing the spread of disease, apart from objections on moral grounds, and the hostility of public sentiment in this country, led to its rejection. It would seem a gross inconsistency for a society which holds that monogamy is the only sure basis of the social order, the normal productivity and progress of the race, to sanction the legal recognition of a class of women set apart for polygamous practices. A society that recommends continence as the surest preventive of venereal infection cannot consistently favor a legalized provision for incontinence. We cannot afford to lower the standard of morality. The supremacy of morals in private or public life can never be established unless we hold fast to those immutable principles of right based upon the "moral code," which is diametrically opposed to the "conventional code of morals."

"Physicians," declares Dr. Osler, "should be the apostles of continence." Whether or not the individual lives of its members conform to this standard, the medical profession in its corporate capacity, in societies and associations, should proclaim the doctrine, based upon sound physiology and experience, that continence is not prejudicial to health. The almost universal infection of the minds of young men with the converse of this doctrine—the so-called "Sexual Necessity"—is in my opinion, the most powerful determining cause of masculine immorality.

Now what has been accomplished by this year's work? The results may be summarized briefly—unfortunately, too briefly. Perhaps it is premature to expect material results, but

there are abundant evidences which would indicate that this innovation represents real progress. The mere agitation of this subject has been of immense service in awakening the perceptions of many serious-minded men and women throughout the country to the real, live importance of this work. The discussions in medical circles, the echoes of which have scarcely reached the public, have served to awaken interest, often in quarters least expected. Seeds wafted here and there, by chance merely, have found lodgment and have already borne fruit in inquiries, in commendation, in demands for more light. Numerous communications have been received from pedagogists, from instructors in physical training, from purity associations, etc., for literature which shall not only teach the teachers, but which may be placed in the hands of young men themselves. Many applications have been received from schools, societies and settlements and other institutions for lecturers who could give talks to young men on sexual subjects.

All these indications point to the conviction that the time is ripe, the opportunity propitious for launching a general campaign of popular education. Physicians are recognized as the logical leaders in this movement. Will the medical profession respond by sharing their knowledge with the public, through discreet literature, by talks and lectures to young men, and most effectively of all, by the formation of auxiliary societies of sanitary and moral prophylaxis which shall be centers for the diffusion of this knowledge?

Already, as signs of progress in this direction, it may be mentioned, that such societies are in process of formation in several cities and states. Another evidence of the awakened interest on the part of the medical profession in this important work may be cited in the fact that more papers have been read before medical societies upon syphilis and certain phases of gonorrhea infection, with special relation to their social dangers, within the last ten months than in the previous twenty years.

Finally I may say that one of the most favorable and cheering indications of progress is the contrast presented by this large, intelligent and, I trust, favorably disposed audience with the small group of half-hearted men who met together in New York twelve months ago, for the purpose of discussing the wisdom and expediency of forming the Society of Sanitary and Moral Prophylaxis. It required months of effort, of written appeals, of personal solicitation, to muster this small advance guard of a movement, which has since grown in numbers, influence and strength, and which is destined, as I believe, to do a great work in the interest of preventive medicine and for the good of humanity.

A BIOLOGICAL INSTITUTE FOR GERMAN EAST AFRICA.—The German Government is about to establish a biological institute in Dar-es-Salaam, East Africa, and has appointed Dr. Pütter, *privat-docent* of physiology in Göttingen, as director. — *Lancet*.

Clinical Department.

FRACTURE OF THE LOWER END OF THE FEMUR.*

BY GEORGE HILL FRANKS, M.D., BROOKLINE, MASS.

J. P. S., a veteran of the Civil War and bank president, aged sixty-four, is a man who weighs 225 to 230 pounds; has always been in the best of health and comes from a strong, vigorous and long-lived family; is inclined to be fat and rather soft, as for a great many years he has been much limited in the amount of exercise which he can take. At the battle of Gettysburg in 1862, he received a Minie ball in his left foot. Being left on the field he was captured by the Confederate troops and taken to Libby Prison where he was confined three months. During this time he had no surgical aid for his foot, which continually grew worse. After his exchange he was forced to submit to an amputation. This was done, by the surgeon's advice at a point eight inches below the knee. Since that time he has been obliged to use an artificial limb. During the rest of the war he served on recruiting duty and other honorable service, being mustered out at the close of the war with the rank of captain.

On Sept. 2, 1904, while taking a vacation in the White Mountains, rising in the night, to go to the window in order to see the view over the mountains by moonlight, and not having the support of his artificial limb, he fell and struck the outer side of the stump on the floor. The pain at the time of the blow was extreme. Fortunately there were two New York physicians of repute in the hotel at the time, so that his leg received immediate attention. He was told by them that he had a fracture of the thigh. On Sept. 6, he returned to Brookline, walking with the aid of canes and without any apparatus on the injured limb. That afternoon I first saw him, having been his family physician for many years. The result of my examination was to find the thigh from about the middle point, the knee, and the stump very much swollen. How much it was difficult to say owing to the atrophy of the limb from disuse. There was also considerable discoloration. The lower half of the femur and the knee-joint were surrounded by so much oedematous tissue that no landmarks could be felt. There was apparent shortening, but the amount could not be determined on account of the deformity and no crepitation could be distinguished. The patient was able to be up and walking on crutches, and had no pain, although there were marked spasms and contractions of the muscles, particularly on manipulation. He had no apparent shock from the fall. He was advised that under prevailing conditions the injury could not be determined without the assistance of an X-ray. The knee was done up in hot fomentations, and arrangements were made with Dr. Ernest Anory Codman, for taking a skiagraph of the leg.

On Sept. 9, for the first time the swelling of the knee had subsided sufficiently so that on manipulation a crepatus could be distinguished on the outer side of the knee but no further symptoms pointing to the exact location and direction of the fracture could be detected. On that afternoon Dr. Codman took a picture which I have the pleasure of exhibiting to you to night.

The lower end of the femur was broken off from the shaft and displaced backward; the fracture apparently extending into the knee-joint.

On the morning of Sept. 10, having secured a nurse, a fracture bed and other apparatus, the leg was put up with extension. On account of the extreme swelling and heat in the knee-joint, I did not consider it safe to

* Read before the Brookline Medical Club, Feb. 7, 1906.

attach the extension straps below the knee. This pulling was expected more to prevent the spasms and contractions of the muscles of the thigh than to draw the lower fragment down into place. A ham splint with a slight curve was applied to the limb to reduce the deformity with straight side and anterior splints.

patient not only to get thorough extension but also a nearly normal flexion of the joint as one of his greatest pleasures is playing upon the organ.

About a week after the movements were begun on manipulating the limb with the extreme force which I was compelled to use, something gave way with a



In this apparatus the leg was much more comfortable as the jerking of the muscles was obviated. The leg quite rapidly diminished in size and appeared to be held in good position.

On Sept. 16, Dr. F. B. Harrington was called in consultation as to the advisability of applying a plaster bandage. At that time the appearance of the knee had much improved although considerable heat and swelling were still present. Although the landmarks were still obscured it felt as if the lower fragment was much nearer to, if not in, its normal position. A plaster bandage reaching from the end of the stump as high as could be without going around the body, was applied by Dr. Harrington and myself. In this appliance the leg was very comfortable and the patient had more freedom of motion. From that time the leg shrank continuously as could be seen by the increasing looseness of the bandage.

On Sept. 28, twenty-six days after the injury, the patient got out of bed and sat in a chair, the bandage at this time being very loose and was held in position by a form of suspenders. On Oct. 7, five weeks after the accident, the plaster was cut longitudinally, care being taken not to break the plaster in removing from the leg. There was still a good deal of swelling in the entire limb and so much thickening around the knee-joint that not much could be made out concerning the position of the lower end of the femur. The motion of knee-joint was very slight. The union of the bone appeared to be quite firm. From that time daily passive movements were applied by me and the leg was massaged twice daily by the nurse. It was very important to the

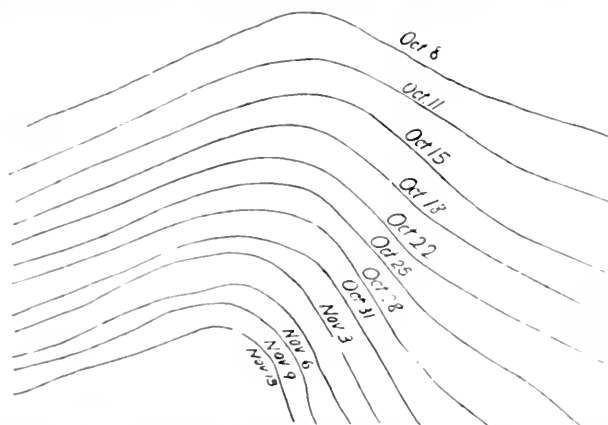
crack which could be heard across the room. No evil result followed from this, however. The reduction of the swelling was quite slow and the thickening around the knee was still slower. The improvement in the motion of the joint can be best seen by examining the diagrams which were traced from the leg every few days.

On Oct. 10, the patient first got on crutches and walked into the next room and on the following day, the 11th, he walked down stairs to luncheon and dinner. On Oct. 14, he went out of doors in a wheel chair.

At this time the question of an artificial leg arose. It was impossible to get the stump into the socket of any leg which the patient had previously used. The knee-joint was so broad that it would not begin to fit between the steel braces which formed the joint of the artificial limb. The top of the socket of one of the legs was removed and a leather socket, which could be adjusted by a lacing in the back, was put in its place. The braces were then spread to admit the knee. As it was found that the patient could not straighten the leg by his own muscular efforts, a steel adjustment was attached to the socket which would throw the lower leg forward automatically. This leg was fitted on Nov. 2 and it was found that with the aid of this mechanism and of his crutches he was able to walk very well and on Nov. 9 he drove into Boston to his bank for the first time, not quite ten weeks from the day of the accident. On Nov. 15 he found that he could get along with one crutch and a cane and on Nov. 28 he went to his business office in that way. At this time

he could walk fairly well with two canes and on level ground with only one. About the middle of December he could walk around the room without any support. Shortly after that my attendance on him ceased although he still continued to have massage and passive movements of the leg by the nurse who came for that purpose. Although I have not examined the knee since that time I have seen the patient at intervals. The leg appears to be as useful as it was before the injury and although he carries a cane on the street he

Dr. C. S. Seudder's book on fractures treats more completely on this subject, and more satisfactorily than any other book at my disposal. He recommends that all apparatus should be removed and inspected in four weeks; union should be firm in from four to six weeks; at the end of eight weeks all apparatus should be removed; in the ninth week the patient should be up on crutches and in twelve weeks should walk without support.



never uses it in the house. The knee-joint is still markedly larger than it was before the accident as he cannot yet get it into any of the old legs.

Massage and rubbing, with passive movements, should be begun when the apparatus is permanently removed.

I do not intend this evening to enter into any lengthy discussion of the commoner forms of fracture of the thigh, but as I was able to find so little recorded regarding this particular form of fracture I think a few facts might be emphasized. From my researches it would appear that this is rather a rare injury because I could find no statistics concerning it. The diagnosis is generally rather easy, there being present some shortening, a mobility at the seat of fracture, a distinct crepitus, usually a displacement backwards of the lower fragment (caused by the contraction of the very powerful gastrocnemii) considerable oedema and more or less nervous shock. The history of a fall, usually landing violently on the feet, is the common occasion of this accident. If the knee-joint is involved, and sometimes when it is not—particularly if the limb is not at once treated, a severe exynovitis is liable to ensue which may cause an ankylosis or a supuration resulting fatally usually.

TREATMENT

The leg should be put up with extension on a curved ham splint or double inclined plane. This should be done under an anæsthetic which relieves the muscular tension so that the dislocation can be more readily reduced. Care should be taken that there should be no pressure on the popliteal vessels.

PROGNOSIS.

In some cases the results of treatment for this form of injury are very good, but in a number of cases there is shortening and stiffness of the knee-joint which sometimes impairs the use of the limb greatly.

Medical Progress.

PROGRESS IN GASTRO-INTESTINAL DISEASES.

BY HUGH F. JONES, M.D.

(Continued from No. 23, p. 667.)

PATHOLOGY OF GASTRIC ULCER

BLOOM¹⁹ contributes an interesting article on the pathogenesis of chronic gastric ulcer. It is generally recognized that three factors contribute to the etiology of gastric ulcer: *Situation*.—The gastric ulcer is almost always near the lesser curvature, and close to the pylorus; occasionally it is found in other regions of the pyloric part of the stomach and more rarely in the middle of the anterior and posterior gastric wall. It is almost never found in the fundus or along the greater curvature. *Acid gastric juice*.—In the second place the acid gastric juice bears a definite relation to the development and course of the ulcer, for

¹⁹ *West Med. Jour.*, 1905, No. 2, (Jan.), p. 131.

this form of ulcer is only found in those regions of the alimentary tract where acid gastric juice occurs. As a rule the secretion is more acid than normal. In ulcer of the esophagus the juice may be regurgitated from the stomach, or acid may be formed from the acid forming cells which exist in that region. *Trauma*. The third accepted cause is some injury to the gastric wall, which exposes the injured tissue to the gastric juice. The healthy gastric wall will not be attacked even if the gastric juice is very strong. As to the nature of the trauma, opinions differ. Many theories have been adduced, but the uniformly characteristic look and situation of the ulcer compel one to consider the same cause as acting in all cases.

It has been found that hemorrhagic infarcts of the mucous membrane may develop into ulcers. Emboli or thrombi and endarteritic processes in the small arteries may be shown as the cause of these. In quite a number of cases embolic abscesses in the mucous membrane appear to have led to the formation of ulcers, but the ulcers in nearly all the above cases were small, fresh superficial ulcers of the mucous membrane, which had little similarity to gastric ulcer. Experimental ulcers have also been produced in various ways but they all heal quickly. Lesions of the nervous system (section of the cord, sympathetics or pneumogastries) are the only sure method of producing ulcers, but such conditions so little resemble those met with in clinical experience that they have not been considered.

Ophuls¹² has confirmed some of these earlier experiments. He was able to produce chronic ulcers of the stomach with marked induration at the base and sharp edges in six of thirty rabbits in whom he cut both vagi below the diaphragm. These six cases were found in eighteen rabbits who were allowed to live for at least twenty-four days after operation. The gastric motility becomes poor, but it later regains its tone. For the present, he remarks, these experiments are simply an interesting observation.

Matthes¹⁶ observed on removing a piece of the gastric mucous membrane that the adjoining tissue contracted and covered the denuded space; if a larger piece was removed the edges only were covered. If the exposed muscularis mucosae were touched with acid gastric juice the contractions of the muscle were so extensive as to conceal even large ulcers. Matthes prevented this by sewing a glass ring on the outer wall of the greater curvature. He then opened the stomach and removed the mucous membrane from this region. After two days he fed the animals as usual, and at the same time maintained marked acidity of the stomach by introducing free hydrochloric acid. Four weeks later the examination of the stomach showed an ulcer in the ring.

Bloch examined five ulcers of the stomach microscopically. He found round-celled infiltration about the ulcer, and an increase of connective tissue, which extended into the muscular

wall, submucosa, muscularis mucosae and the surrounding mucous membrane. The walls and bases of the ulcer were uneven because the connective tissue and muscle were partially dissolved and necrotic. The base and walls of the ulcers were covered with many bacteria, but these were probably due to post-mortem changes because elsewhere in the stomach the bacteria were quite as abundant. Bacteria have been considered by some as an etiological factor in the form of ulcer and therefore, Bloch studied this question further. In two calves with perforated ulcers of the stomach bacteria were found only at the site of perforation, and here chiefly at the peritoneal surface. None were present in the ulcer.

Fresh ulcerations of the stomach are frequently found in infants who die with intestinal affections. These infants shortly before death vomit brown colored material containing blood. Bloch examined the stomach in two cases of this type. Hemorrhagic erosions were everywhere present, single or multiple, small or large. The hemorrhages can be seen especially in the interstitial tissue between the glands, and some coagula are as thick as the mucous membrane. The epithelium in some cases is lost over the hemorrhagic area, thus forming superficial ulcerations, but in others does not. The absence of epithelium from over the hemorrhagic areas is noticed chiefly in the region of the pylorus and lesser curvature, where the blood coagula extended to the muscularis mucosae. About this area the tissue was necrotic, and surrounded by round-celled infiltration. No bacteria were present in the tissue. All forms of transition were present between the hemorrhagic erosions and the larger ulcerations. The hemorrhages apparently entered the superficial epithelium, and so exposed the tissue to the digestive action of the gastric juice. The destruction of the superficial layer of mucus producing epithelium cells led to the ulcer rather than diminished circulation. Claude Bernard suggested that this layer of epithelium protected the tissue, and Matthes' experiment confirmed the earlier observation. It should be noted that the hemorrhages in the mucous membrane developed into deeper ulcerations only in the region of the lesser curvature and pylorus. Hemorrhages were as frequent in other portions of the stomach but no ulcers. Small hemorrhagic erosions appeared. It is true that the ulcers above described were not actually typical of peptic ulcer except in their localization. A cause for the development of the ulcers at the pylorus and lesser curvature cannot be explained by differences in the mucous membrane here from that in other portions of the stomach, for none exist. There is, however, an anatomical difference.

The stomach is usually described in its dilated state, the greater curvature then makes a long, sharp bow. The contracted stomach is very different. The arcs of the two curvatures are then quite similar, and the distance between the two is so slight as to give to the stomach the appearance of a sausage. The greater curvature is shortened most of all at the fundus. Measure-

¹² Jour. of Exp. Med., 1906, vol. VIII, p. 181.

¹⁶ Ziegler's Beiträge, 1893 Bd. 13.

ments show that the greater curvature in the dilated stomach is three to four times as long as the lesser, but in the contracted stomach it is barely twice as long, while the lesser curvature remains about the same in the dilated and contracted organs. Corresponding to the dimensions of the stomach is the change in the appearance of the mucous membrane. While in the distended it is almost everywhere smooth, in the contracted organ there are longitudinal and transverse folds which are highest and longest along the greater curvature, but less marked as the lesser curvature and pylorus are approached. Bloch confirmed these observations on fifty stomachs.

A study of the course of the muscle fibers of the stomach wall shows how these folds must occur. This is also obvious if one compares the fixed attachments of the lesser curvature between the cardiac orifice and the horizontal portion of the duodenum. Between these parts is the attachment of the lesser omentum, which consists of firm fibrous tissues through which large vessels pass to the hilus of the liver. The stomach also is held in position by the liver. Normal contractions of the stomach, therefore, can produce no essential shortening of the lesser curvature. The opposite holds for the lesser curvature. This swings completely free and can change its shape according to the degree of contraction.

The ulcers above described, as well as common gastric ulcer, are found chiefly near the pylorus and lesser curvature where the stomach is less able to contract, produces folds, and so protects the mucous membrane. Ulcers seldom appear along the greater curvature where the contractions of the muscular wall is unimpeded. These anatomical facts were simulated by Matthes's experiment by which he prevented local contraction of the gastric wall, and so artificially produced ulcerations.

Abscesses, necrosis or hemorrhage in the mucous membrane of the stomach will not cause an ulcer if the superficial epithelium remains intact. If this is lost ulceration occurs, and the acid gastric juice exercises its destructive action. A slight lesion may be covered up by the neighboring mucous membrane through the contraction of the muscularis mucosae. But if the lesion is large its course will vary according to its location in the stomach. Along the greater curvature the injured area may be protected, but on the lesser curvature or at the pylorus contraction of the gastric wall is limited, and the denuded area will be constantly exposed to the acid gastric juice. It is easy to explain why erosions may occur in any region of the stomach but ulcers only at the pylorus and along the lesser curvature. Ulcers in these latter regions may heal perhaps by the new formed connective tissue drawing the edges together, or, what is more likely, by the formation of new epithelium working in from the edges. In either instance a scar will be left if the ulceration has extended to the submucosa. It is easy to understand why the ulceration is most extensive in the mucous membrane, less so in the submucosa, and least of all in the muscle layer, thus

giving the characteristic "wedge shape and steps" of the gastric ulcer.

During digestion the stomach is in a uniformly contracted state. This contraction becomes more marked on the appearance of an ulcer. The central portion of the ulcer would be first attacked by the digestive juice because this would be the least protected by the surrounding tissue. With the lessening up of the contractions of the gastric wall the various layers of the stomach would slide over one another to a much freer extent on the greater than on the lesser curvature. These contractions will not properly take place unless the centripetal and centrifugal nerve supply of the muscular wall is intact. This explains why ulcers occur when any break in this arc occurs, for instance, in the sympathetics, vagi, spinal cord and medulla itself. As a result of such lesions hemorrhages or hyperemia occur with local destruction of tissue. This is exposed to the acid gastric juice because the contraction of the muscles can no longer protect it. The primary cause of the original lesion of the mucous membrane is seldom seen because the subsequent necrosis of tissue will have destroyed its identity.

INANITION IN DYSPEPTICS AND NERVOUS INVALIDS.

Matthieu and Roux discuss inanition which occurs in dyspeptics and nervous invalids.¹² The condition is most common in dyspeptics and neurasthenics, and since it is usually accompanied by loss of appetite or a perversion of the sense of hunger, no relief is obtained and the nervous symptoms become aggravated. In short, there is a vicious circle. Insomnia often plays a prominent rôle and esophageal spasm and uncontrollable vomiting may contribute to it. Finally, the effects of treatment with drugs given by various physicians may appear in the form of agastritis, until at length the patient is in a critical state. A severe gastric disease is considered a fatal prognosis may be given, and if the condition is not recognized death may really ensue.

The loss of weight may have been noticed in some cases but in others it has been so gradual as to be unobserved even by the friends. They recognize no other condition than the present one of malnutrition. In such patients the apparent volume of the liver is distinctly diminished. Its position may be lower or higher than normal. If other etiological factors can be excluded the small liver can be considered proof that the diet has for long been insufficient. With return of nutrition the liver increases in size.

People who lose strength and weight involuntarily are tormented by hunger and thirst. This is especially true if the starvation is at all general in the community, then one person aggravates the other's feelings, the same fact holds true for cases of stricture of the esophagus. With dyspeptics and neurasthenics the condition is other wise. This inanition is not so agreeable to them and their feeling of hunger is unrecognizable.

The loss of appetite may occur suddenly, but is more commonly of gradual onset. Nausea, distention and heaviness after food discourage eating, and one article after another is banished from the table. Often the nausea is accompanied by vomiting of mucus, similarly to that of patients with esophageal spasm. A feeling of fullness and weight appears behind the sternum, while the symptoms of anorexia may be most manifold. It is important to recognize this state or the treatment may continue the condition.

The tongue is white and not clean, the stomach splashes, and these signs may deceive the doctor. He should remember that they will disappear only with better nutrition. Chorsat has shown that in inanition the whole alimentary canal becomes smaller and emaciated just as the other tissues. The muscles of the stomach probably suffer likewise. It appears dilated even with a comparatively small quantity of fluid, and the doctor may fear to feed, though if he does the stomach will return to the normal, as the patient gains in strength. This may require months.

Hunger delirium occurs among people who are besieged or shipwrecked rather than in the cases of voluntary inanition. The progressive development of many a moral and physical sign of degeneration is observed.

Matthieu divides these patients with extreme inanition into three groups: (1) *Simple neurasthenia*. This is the most favorable form. The patient complains of discomfort after eating, continually narrows the volume of the diet in order to avoid this discomfort, and is perfectly satisfied with this peculiar mode of treatment. He gradually grows weaker, gets into a vicious circle, is despondent but resigned. He is capable of reasoning and understands how he must eat to regain strength. To successfully treat such patients one should explain to them that for the first two or three weeks they will have more or less digestive discomfort, but in spite of it must eat. (2) *Hysterical debility*. The patient is incapable of making the exertion which will bring him out of the condition into which he has fallen. Threats, requests and tears are without avail. He or she acts as if amused by these. Not until reduced to a living skeleton is an effort made to gain, and then it may be too late. The anorexia may have developed in various ways from indigestion,—pain, vomiting, esophageal spasm, sorrow, disappointed love, desire for attention, or desire to become thin. Anorexia rules, and there is total failure of the will to become well or to make an exertion for recovery. Common sense and threats are received with indifference or joking skepticism. Isolation and confinement in bed without any diversions are the best modes of treatment. (3) *Hereditary degeneration with fixed idea*. The patients have a poor heredity and imagine their stomach small, the intestines narrowed, the gastric juices insufficient, or themselves poisoned by fermentation or decomposition products. If not too long established their ideas can be conquered, but relapse is easy; if long established the condition develops into a

pure psychopathic state. On account of their fixed ideas they are really mentally unsound. One cannot drive their absurd ideas out of their heads. Prognosis is far less favorable.

CARBONIC ACID IN THE STOMACH.

Through careful examinations of dogs Loening¹⁸ was able to determine that the stomach absorbs to a large degree carbonic acid, which has been given with water. This absorption takes place very quickly in the first few minutes, so that over one half of the carbonic acid is absorbed in five minutes, and three quarters of it after ten to fifteen minutes. This rate of absorption then quickly decreases, so that after an hour but a small amount of the carbonic acid is left, which is absorbed either very slowly or not at all. The carbonic acid is also absorbed in large quantities from alcoholic drinks.

Seidelin¹⁹ reports examinations of the gastric contents of old people. In seventy elderly persons of fifty to seventy years of age, whom Seidelin examined, free hydrochloric acid was absent in the stomach juice in 28 (40%) while in numerous other cases the presence of hydrochloric acid was very slight, so that only with 6 persons, equal to 10%, the hydrochloric acid was within normal quantity. There were 35% of cases of achylia gastrica among the women, and 55% among the men. Arteriosclerosis seems to favor the lack of hydrochloric acid. As the result of his examinations Seidelin says that the secretion of the stomach juice can remain normal into old age, despite the signs of senility, but on the other hand, achylia gastrica appears in a comparatively large number of cases among elderly people. The significance of this fact is important in the diagnosis of cancer in elderly people.

(To be continued.)

Reports of Societies.

THE AMERICAN THERAPEUTIC SOCIETY.

SEVENTH ANNUAL MEETING HELD AT THE ACADEMY OF MEDICINE, NEW YORK, MAY 3, 4 AND 5.

(Concluded from No. 23, p. 659.)

THURSDAY, MAY 3. — Continued.

DR. T. E. SATTERTHWAIT, New York, read a paper ON THE DUTIES AND RESPONSIBILITIES OF THE PHYSICIAN IN BORDER-LINE DISEASES.

Up to this time, he said, the management of diseases on the border line between medicine and surgery had received very little attention from the textbooks of medicine. In fact, it was quite exceptional to find them considered, judicially, from the dual standpoint of the physician and the surgeon. In one of the most recent works on practice, for example, appendicitis was regarded as so pre-eminently a surgical affection that it was held to be proper for the physician, immediately on its recognition, to turn the patient over to the surgeon. Such an attitude, however, placed the

¹⁸ Zeits. für klin. Med., cited in Zentralbl. f. inn. Med., 1905, No. 23, p. 578.

¹⁹ Berl. klin. Woch., cited in Zentralbl. f. inn. Med., 1905, No. 23, p. 574.

physician in a false position, where he not only jeopardized the prospects of his patient, but rendered himself liable to adverse criticism. The same criticism might be directed against the medical practitioner when he was called upon for a professional opinion in the treatment of the twenty and more other diseases on the border line between medicine and surgery. In all these there were times when the physician might very properly ask himself, Is this an operative or nonoperative case? The affections referred to were abdominal and pelvic tumors, cirrhoses of the liver, pancreatic diseases, morbid collections in the kidney, chronic Bright's disease, cholelithiasis, intestinal hemorrhages, obstruction or traumatism, enlarged prostate, pleurisy or pericarditis with effusion, acute or chronic mastoid disease, diseases of the accessory sinuses, malignant tumors in general, epilepsy, hemorrhoids and even habitual constipation. The present relations between medicine and surgery made it obligatory on the part of the conscientious practitioner to keep himself informed as to the comparative advantages of all the methods in vogue, not only as applicable to any given case, but to the various phases of it; so that he might be ready at all times to give his patients the benefit of that treatment which offered the best prospect of relief. To this end he should be fully acquainted with all the latest improvements in the treatment of disease, whether they were medical, surgical, mechanical, hygienic, dietetic or even psychic; and particularly should he be able to form and give intelligent opinions as to the question of operative or non-operative measures in any of the affections mentioned. The physician would thus be prepared to enter the consulting room armed with definite data, from which to draw intelligent conclusions, perhaps, in the light of other facts elicited by the surgeon or brought to his notice by the patient or his friends. The average physician excelled the average surgeon in diagnostic ability, and surgeons were now disposed to admit that their increasing success was richly dependent on closer attention to diagnosis, including not only a more thorough study of their patients' histories and symptoms, but the use of aids the physician more especially recognized, such as pathological and laboratory findings and the newer methods of physical examination. If, therefore, the physician excelled the surgeon in diagnosis, what could conduce more to the successful issue of a case than that each should contribute his quantum of information and experience in these border-line diseases? Under certain circumstances a surgeon might urgently require both the counsel and the co-operation of the physician. If, for example, the chances of life were going to be slightly improved by an operation, but the surgeon hesitated, perhaps because his personal experience had been unfortunate in this particular line of affections, it would then become the imperative duty of the physician to urge the operation, as holding out the best prospects for success. Dr. Satterthwaite said that while he was perfectly willing to admit that the surgical operation in appendicitis had saved many lives which would have been lost under non-operative treatment, this was far from saying that all cases of the disease should go to the surgeon. He then discussed very fully the indications calling for operative interference and the circumstances in which this should be withheld. Having paid considerable attention also to pyelitis and pyelonephritis, he went on to say that in nearly all the border-line affections he had enumerated (the exceptions being possibly diseases of the pancreas and certainly pyothorax and certain suppurative diseases of the abdominal cavity, such as of the liver and spleen) non-operative treatment, and

certainly prophylaxis, on the part of the medical attendant, was of recognized utility. His contention in this paper, however, was this: In all the affections referred to he would have the physician fully informed as to the best methods of treatment, whether medical or surgical, the proper time to call for surgical advice, and the chances for the patient's recovery under surgical, as against medical, measures. More than this, he would have the physician qualify himself to make the diagnosis in all these cases, and be ready to sustain the surgeon should an operation be deemed advisable. Finally, he would urge that future textbooks of medicine contain not only the latest diagnostic data in these border-line diseases, but the most recent statistics of successful treatment, whether by medical, surgical or any other means.

In the discussion following the paper, Dr. F. H. Gerrish, Portland, Me., said that certain of the diseases which Dr. Satterthwaite had designated as border-line affections he, himself, would regard as purely surgical as soon as the diagnosis was arrived at.

FRIDAY, MAY 4.

DR. F. E. STEWART, East Orange, N. J., read a paper entitled:

WHY THE MEDICAL PROFESSION SHOULD SUPPORT THE PHARMACOPEIA.

Having given the history of the Pharmacopeia, he said the medical profession was a privileged class in the community, responsible to the state for the advancement of medical practice, including pharmacy and the maintenance of a pharmacopeia. Thus far, with the exception of a devoted few, the profession had taken very little interest either in pharmacy or the Pharmacopeia. It was time for a change of policy in this regard. Without a pharmacopeia progress in drug therapeutics was impossible. Common standards for determining the identity, purity and strength of medicines were necessary to maintain uniformity in them. Physicians should support the Pharmacopeia, for in no other way could pharmacy be redeemed from those who were attempting to convert the practice of pharmacy into a commercial business; in no other way could pharmacy be restored to medicine as a branch of medical science and practice. It was not a question of the retail druggist *versus* the manufacturer, as some would have us believe. The question was pharmacy and the Pharmacopeia *versus* a commercial business carried on under the name of pharmacy by those retail druggists and manufacturing houses alike who conducted their vocation in opposition to scientific and professional requirements and deluded the sick with misleading advertisements.

DR. L. KOLINSKI, Washington, D. C., read a paper on

THE EFFECT OF TREATMENT OF THE VOMITING OF PREGNANCY.

The pernicious vomiting of pregnancy, characterized by its intense symptoms and its fatality, he said, was as rare as the simple vomiting of that state was common. Having described the symptoms he stated that for precision of diagnosis and propriety of treatment the vomiting of pregnancy should be considered pernicious whenever weakness and wasting of the body had become sufficiently great to prevent the patient leaving her bed. He then gave the various treatments, based on different etiological hypotheses, which had been commended. The *distension of oophorum* was induced abortion or premature labor. A careful study of the phenomena presented in the condition had led Dr. Kolinski to discard the treatments hitherto in

vogue and to attempt the plan of a diet comprised of substances limited in number and of such physical structure that, by reason of their density and heaviness, their ejection from the stomach was well nigh impossible. Of proper foods, pork (ham or bacon) was first. A woman who had vomited incessantly for two or three weeks, who was too feeble to leave her bed, who had received varied and unsuccessful treatment, whose whole appearance was that of alarm, would find to her intense astonishment that the emesis did not occur after a breakfast of fried ham or bacon. She would then find that partaking of other solids improved her condition, and within a few days sleep and strength would have returned, so that she could be up and about again. In considering the factors producing this quiet he said it was apparent that the chief one was the stable tone given to the distressed viscus, much like ballast to a vessel in troubled waters. The co-operation of the patient, due to new confidence and the assurance that her malady could be cured, was also very helpful. The daily breakfast should consist of pork in some form, with corn bread and cocoa or chocolate. At other meals might be taken beefsteak, roast or corned beef, and such vegetables as rice, potatoes, spinach, cauliflower and turnips. Fish, game, fowl and cheese are also good articles of diet. Foods which induced vomiting were water, if taken freely, milk, tea, coffee, soups and fluids in general, eggs, custards, toast and fruit. The most unstable combination of a diet was toast, eggs and sweetened tea. Dr. Kolipinski had used this dietetic treatment with success in two cases of pernicious vomiting and also in instances of obstinate vomiting of the ordinary variety, and believed it worthy of trial by others.

DR. ROBERT REYBURN, Washington, D. C., read a paper on

THE MEDICAL TREATMENT OF CANCER.

As a preliminary to the question of treatment he expressed his opinions concerning the causes of cancer. He gave as the first and probably most powerful predisposing cause senility of the tissues and organs of the body. The real test of old age, he said, was not the number of years a person has lived, but the retrograde metamorphosis and degeneration which has taken place in the various parts of the body. Other predisposing causes were the habitual use of alcohol and the consumption of too much meat and other nitrogenized food. Two facts as to the causation of cancer seemed to be now generally admitted: (1) That it is probably always local in its early stages; (2) that its origin is due to some injury or local irritation of the part affected. Believing, as he did, that cancer is simply an error of cell development depending upon the retention of waste matter in the system, he said the treatment might be divided into two classes, the preventive and curative. To epitomize the treatment of cancer cases, it should be the effort of physicians to endeavor to bring their patients into the highest condition of personal health and excellence of hygiene. He thought it lamentable to see the apparent helplessness of most medical men when confronted with cases of cancer. Generally no attempt was made to treat these cases by medication, or to improve their hygiene, and the sole resource seemed to be the knife, the x-ray, or some form of electricity. Valuable as these agents were, it was his firm conviction that our success would be far greater if we would conjoin them with appropriate medical treatment. Each case must be studied individually and treated accordingly.

In the discussion DR. R. T. NORRIS, New York, said he would operate in all cases of cancer that were operable just as soon as the diagnosis was made, provided

such diagnosis were made early. Immediate operation was also strongly advocated by Drs. Gerrish, Satterthwaite, Lloyd, Leech and Janvrin.

DR. L. S. PILCHER, Brooklyn, N. Y., read a paper on

REMOVAL OF THE PROSTATE FOR THE CURE OF PROSTATIC DYSURIA.

Having summarized the conclusions which he had presented in two previous papers in which he had discussed the methods and results of prostatectomy for the relief of this condition, he stated that these conclusions had nowise been shaken by the experience of another year. In all the thirty cases previously reported, with one exception, the method of approach to the prostate had been through the perineum. In six cases operated since that report, only one had been perineal; in the remaining five the suprapubic transvesical route was employed. In the latter he had been well pleased with the control over the region of operation secured by the introduction of the gloved finger into the rectum, making counter-pressure against the prostate. Although his experience with it was limited, it had been sufficient to demonstrate to him that a very considerable advantage in the way of obtaining an intelligent direction of the work of enucleation could be secured by this method of conjoined rectal and intravesical manipulation, and he was now inclined to give a larger field for the suprapubic route than he had done in his earlier studies. In the majority of cases, however, he thought it probable that some method of attack from the perineum would continue to be method of choice. He was inclined to think that for the best fulfillment of all the operative indications, when the perineal route was adopted, it was desirable that a free exposure of the gland by a suitable perineal incision and retraction of overlying parts should be made. The gland, after it has been exposed, should be brought down as much as possible into the superficial operative field by the use of suitable tractors, and the removal of the obstructing masses should be carefully and systematically effected, under the guidance of the eye as much as possible. This was simply an application of that tenet of general surgery which demands the adequate exposure of an affected part as the first step of an attack upon it.

DR. HOWARD VAN RENSSELAER, Albany, N. Y., read a paper on

THE ETIOLOGY AND TREATMENT OF UREMIA.

Having reviewed some of the prevailing opinions as to the etiology and pathology of uremic states, he said he thought we were justified in assuming the following conditions to be present: That, probably by the action of bacteria in the intestine or liver, there is circulating in the blood a poisonous proteid, which is the actual exciting cause of uremia. That this proteid, by its irritant and destructive action on the kidney tissue, prevents not only itself from being changed or excreted, but prevents the elimination also of other excrementitious matters, such as urea, extractives and salts, and permits their accumulation in the blood. That these excrementitious matters are capable of producing part of the symptoms, such as vomiting, diarrhea, prostration, increased heart action, contraction of the pupils and, perhaps, muscular tremors. That the hyperosmosis produced by the increased amount of the crystalloid substances may perhaps modify the composition of the cellular structure in different parts of the body, sufficient to interfere with their functions and give rise to symptoms. If these premises were correct, he thought the treatment of uremia should be conducted along four general lines:

(1) *Removal of the Exciting Causes.*—Under this

he would place (a) Removal of the proteid by venesection. For an average sized adult a pint of blood, or even a little more, might be withdrawn, as early as possible during the uremic seizure. This method was also the quickest means of reducing the tension in the blood vessels. (b) Lessening the toxicity of the blood by dilution. This might be done in three ways. By the intravenous injection of a saline solution, by hypodermoclysis, or by drinking large quantities of pure water. This third method was the slowest, but it was the simplest and safest, and he believed it to be the best. (c) Removal of urea and extractives by dialysis. Here we should aid in removing these deleterious substances by stimulating the excretories in four ways: By drinking water, catharsis, diaphoresis and diuresis.

(2) *Prevention of the Reappearance of the Exciting Causes.*—If a poisonous proteid was produced by bacteria, it was obvious that we should keep the intestinal canal as clean as possible by catharsis, possibly aided by antiseptics, and be extremely cautious in the administration of food containing proteid.

(3) *Physiological Rest to the Diseased Tissues.*—Food, in the case of adults, should be withheld for at least twenty-four hours, when small quantities of peptonized milk or diluted gruels might be allowed. Cathartic and diaphoretic treatment also aided in giving the kidneys rest.

(4) *The Treatment of Individual Symptoms as they Arise.*—Convulsions might sometimes be controlled by chloroform or other anesthesia, or by morphine hypodermically. In those individuals whose pupils were dilated morphine seemed to act beneficially, while in those whose pupils were contracted, the reverse was true. Successful results had recently been reported from spinal puncture and the removal of sufficient cerebrospinal fluid to bring the intracranial pressure down to normal.

DR. SAMUEL LLOYD, New York, read a paper on

THE SURGICAL SIGNIFICANCE OF JAUNDICE.

He said that within the last few years jaundice had taken on a new significance, and that the great bulk of the information now at hand as to its cause was the result of surgical investigation. Having referred to the various classifications of jaundice, he mentioned one condition not included in Mayo Robinson's tabulation of the extra-hepatic variety which in his opinion was a direct result of the chronic catarrh of the gall ducts. This was an inspissation of the bile filling the common duct and sometimes the gall bladder, and even the hepatic ducts for a considerable distance into the liver itself, with a thick, pasty, dark bile. The bile was of about the consistency of soft putty, and offered a complete obstruction to the natural escape of the fluid. Medical treatment could be of little avail in removing this, while the results of operative treatment were so prompt, and offered so little danger, that it should be undertaken early. Two conditions had to be considered most carefully in the surgical treatment of jaundice; the changes in the blood and the condition of the kidneys. As regards the former, the change of most serious character was the marked decrease in coagulability; in fact, a pseudohemophilia, and it constituted one of the most dreaded conditions that surgery had to contend with in operations on the liver and bile ducts. The hemorrhages resulting from this condition did not, as a rule, occur immediately after the operation, but began from one to four days later. In all cases of prolonged jaundice marked and generally increasing anemia had also to be contended with; therefore, it was important that the percentage of hemoglobin should be determined at the same time that the coagulability of the blood was being investi-

gated. Operations of any kind undertaken with a hemoglobin percentage of less than thirty were exceedingly serious. Changes in the kidneys were important, both in determining the anesthetic to be employed and in influencing the prognosis. Naturally, when we had added to the toxemia of the jaundice the toxemia of nephritis, the patient was in a very bad condition to resist any surgical interference. It was not the surgeon's fault that the percentage of deaths in these cases was so high, but rather that of the medical practitioner, who delayed calling in the surgeon until such a serious condition had developed. Cases of jaundice which came to the operating table early, before they were suffering from general toxemia, did well, and usually recovered promptly. It was also to be remembered that in all probability the chronic irritation of gallstones may be the potent cause for the development of cancer of the gall bladder, gall ducts, duodenum, pylorus or pancreas. Many of the conditions referable to the stomach and treated as chronic gastric affections were also due to a spasm of the gall bladder and ducts, either with or without a chronic empyema. Exploratory incision would undoubtedly reveal the cause of many of these gastric troubles. It was of great importance, if possible, to determine prior to the operation whether the condition is due to removable obstruction or to malignancy. Enlarged liver was much more common in obstruction due to cancer than from gallstones, though it might be present in either. The conclusion of the paper was devoted to a brief consideration of the intrahepatic conditions.

The scientific sessions were brought to a close by a SYMPOSIUM ON THE RECENT ADVANCES IN SPECIAL THERAPEUTICS.

as follows: "Pediatrics," Dr. J. Madison Taylor; "Ophthalmology," Dr. W. B. Marple; "Gynecology," Dr. H. C. Gee; "Surgery," Dr. John B. Deaver; "Neurology," Dr. E. D. Fisher; "Obstetrics," Dr. L. H. Grandid; "Laryngology," Dr. C. H. Knight; "Electrotherapeutics," Dr. W. J. Morton; "Otology," Dr. Wendell C. Phillips.

The meeting on the third day, May 5, was devoted exclusively to the transaction of business.

Recent Literature.

Eye, Ear, Nose and Throat Nursing. By A. EDWARD DAVIS, A.M., M.D., and BEAMAN DORRASS, M.D. With 32 illustrations. Pp. 302. Philadelphia: L. V. Davis Company.

Although this book has been written for nurses it will certainly interest the practitioner and medical student. The question of antiseptics and asepsis, the preparation of solutions and dressings, have been carefully explained and the importance of preliminary training in some good general hospital before attempting the technicalities of special work has been emphasized. The authors in their endeavor to instruct nurses as to their duties in caring for operative cases and diseased conditions have succeeded in producing a volume containing a surprising amount of useful information, considering its small size, which will prove to be valuable as a textbook for training school and institution work and likewise a convenient means of ready reference in private nursing.

Practical Sanitary Science. A Handbook for the Public Health Laboratory. By DAVID SOMMERVILLE, B.A., M.D., Lecturer in Public Health, King's College, London. New York: William Wood & Co. Pp. x, 310. 1906.

The literary style of this handbook reminds the readers of a ride over a corduroy road; the substance excites conflicting sensations, — sadness to deep depression; gentle merriment to explosive hilarity; incredulous surprise to amazement; sympathy and admiration. Although intended for the laboratory, it is more suited to the hammock after a hard day's work. Time and space are too valuable for a critical analysis. It approaches far more than any other work of recent years that superlative known in the vernacular as "the limit."

Nose and Throat Surgery. Nasal Sinus Surgery with Operations on the Nose and Throat. By BEAMAN DOUGLASS, M.D., Professor of Diseases of the Nose and Throat in the New York Post-Graduate Medical School and Hospital. Illustrated with 68 full-page half-tone and colored plates. Philadelphia: F. A. Davis Company. 1906.

This is a book of 260 pages, describing concisely and clearly the important operations on the nose and throat, including also a review of the essential anatomy and a series of excellent half-tone plates from prepared anatomical specimens. Most of the book is devoted to the nasal accessory sinuses. For each of these sinuses in turn the anatomy and variations, the diagnosis of empyema, the different conservative methods of treatment and radical operations are described. The frontal sinus is first taken up, ending with a description of the different radical operations, of which the open method is classed as the ordinary operation and that of Kuhnt as the typical radical operation, although that of Killian is given in some detail. The ethmoid cells, the antrum and the sphenoidal sinuses are taken up in turn, and the anatomy, diagnosis of empyema and treatment well illustrated. The author omits to call attention to the value of the x-ray in discovering the size and shape of the frontal sinus before operating, and as a possible aid to diagnosis both here and in the antrum.

The next subject is deviation of the nasal septum, concerning the treatment of which there is so much difference of opinion that it would be impossible at the present day for any one in a short space to satisfy most of his readers. The author will probably be largely criticised for his comparative neglect of the submucous method of operating.

Cosmetic operations for the correction of deformities of the external nose are briefly described, including the injection of paraffin for the saddle-back bridge. To correct deviating nasal bones the author boldly goes through the skin, a method which has not previously received the attention it deserves but which must be carefully undertaken to avoid the danger of unsightly

scars. The same caution is even more necessary in recommending the insertion of foreign bodies under the skin for the purpose of building up a sunken nose. The removal of the turbinates and enlarged tonsils and adenoids receives careful attention. For the latter operation the author prefers a quick operation under nitrous oxide. In this community ether is the routine anesthetic, giving more time. The last chapter is devoted to tracheotomy and a brief description of laryngotomy.

There has been a need for a book of this kind. Methods of operating have developed rapidly during the past few years, and certain of these operations have not been adequately collected in our general textbooks. The book is well written, well arranged, clear and concise, perhaps too concise, as it omits references to fuller descriptions of the different operations, and does not always give sufficient detail to guide the operator without further assistance. But, on the whole, it fills the place which it was intended to fill very satisfactorily.

Atmokaussis und Zystokaussis die Behandlung mit Hochgespanntem Wasserdampf in der Gynaekologie. Von DR. LUDWIG PINCUS. Frauenarzt in Danzig. Zweite verbesserte Auflage mit 33 Textfiguren und Tafeln. Wiesbaden: J. F. Bergmann. 1906.

This is the second edition of Dr. Pincus's monograph on the treatment of the uterine cavity with steam under high pressure.

It is a volume of 371 large pages illustrated by thirty-three drawings in the text and five plates.

The author gives a most exhaustive historical review of the employment of hot water and steam to arrest hemorrhage and to cauterize, finding that the Greeks and Romans undoubtedly used this method. J. N. Rust, 1830, was the first to employ it systematically. Dzondi of Halle invented a machine in 1821 for generating steam for surgical uses, a rude model for the Pincus apparatus.

The different styles of development of the author's instruments are described and figured in great detail, followed by the scientific and theoretical considerations which were the foundation of his technique. Then came the gross and microscopic appearances of the uterine mucosa following steaming for varying lengths of time and at different temperatures.

The last half of the work is devoted to the clinical aspects of the application of steam. Here are to be found set forth with all the necessary minutiae, the steps of the technique and the indications and contra-indications for the use of steam cauterization. At the end of the book is an index of the literature, another of the authors and a third of the subjects cited.

To any one wishing to employ vaporization of the uterus and desiring to go to the fountain head of information on the subject the possession of this treatise is a necessity.

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REPORT OF THE MASSACHUSETTS STATE BOARD OF INSANITY.

The seventh annual report of the Massachusetts State Board of Insanity for the year ending Sept. 30, 1905, is in our hands. It will be remembered that the functions of this board are extensive inasmuch as the insane, the feeble-minded, the epileptic and the inebriate classes are all under its supervision. The entire number under care at the conclusion of the last year was 11,900, almost equally divided as to men and women. This was an increase for the year of 416. The larger part of these naturally are included under the general heading of the insane, and it is a rather startling fact that a simple calculation shows one insane person to every 206 persons of the general population. The removal of the insane from almshouses was entirely accomplished during the year, a total of 212 persons. It is gratifying, however, to note that the actual year's increase of the insane in public institutions fell far below that of any other recent year. The reason for this is somewhat difficult to analyze, but we are at least hopeful that preliminary care and quicker recognition of the onset of mental disease has done something to forestall graver consequences, demanding asylum treatment.

It is also satisfactory to record the fact that the relief from extreme overcrowding has been accomplished, and that complete correction of this evil is assured if the state continues to pursue the policy of meeting the constant demand for additional accommodation each year. The board recommends that provision be made during the coming year for 200 additional patients, which

at the present rate of increase, should adequately meet the demand.

The constant growth in efficiency of the school for the feeble-minded at Waltham has repeatedly called public attention to this institution. The extension of the work by the establishment of the Templeton colony and the very great benefit resulting to the patients therefrom has demonstrated that even the feeble-minded may be made of use and cease to be a mere burden to the state. Certain buildings are needed by this institution, the money for which should be forthcoming. In this connection it is important to observe that the provision for feeble-minded children in institutions adapted to their peculiar requirements is still inadequate in this state. In the neighborhood of one thousand applicants have been denied admission to the School for Feeble-Minded because of lack of room, with the result that these unfortunate children are housed at almshouses and even at insane hospitals, where naturally they cannot receive the care and instruction calculated to develop their imperfect faculties. This is evidently a serious matter. Such children must be cared for. They are peculiarly helpless and often inimical to the welfare of society, and every effort should be made to train them to the extent of their ability in order that they may at least become harmless and possibly useful members of the community. It has been amply demonstrated that much may be done for these children and it is none the less manifest that if nothing is done their future is not only pitiable in itself, but entails results which later force them upon the state, not infrequently among the criminal classes. The moral aspect of the question is also one of great importance and every legitimate means should be taken to prevent the reproduction of this irresponsible class. In view of these facts the board strongly recommends a progressive extension of accommodation for this class in existing institutions. It is also of the opinion, which the trustees of the Waltham School likewise hold, that the future of Waltham should be rather in the completion of its present facilities than in further extension of its capacity, which when the present buildings are completed will be 1,000 at Waltham and 250 at Templeton. It is therefore recommended that a new institution of a similar character be established preferably in the western part of the state. This undertaking should be begun at once to meet the growing demand.

Another class of the cognitum, which demands attention and for which the provision is even less

than that for the feeble-minded is epileptic children. It is suggested that the present hospital for epileptics be extended by the formation of a department for the care of children under fourteen years of age. It is, perhaps, difficult to distinguish in practice between the simple epileptic child and the epileptic associated with idiocy, but some effort toward a differentiation should be made, and to this end it is altogether desirable that provision for the young epileptic should be made at those institutions where the disease is particularly treated.

In general, this report of the State Board of Insanity is encouraging. It demonstrates the extreme interest which is being taken in the various defective classes and the excellent work which is being done by our various institutions. It is not to be questioned that Massachusetts will continue to maintain its pre-eminence as a progressive and far-seeing state in relation to the great social and economic problems relating to the care of its dependent classes.

MEETING OF THE MASSACHUSETTS MEDICAL SOCIETY.

OWING to the recent meeting of the American Medical Association in Boston, the program of the Massachusetts Medical Society, which met this week, has been somewhat curtailed. In view of the many scientific communications which the physicians of Massachusetts, in common with those from other parts of the country, have had the privilege of listening to during the past week, those who have had the arrangement of the meeting in charge have done wisely in limiting the papers to be read to one morning of the session and taking up but a single subject, namely, diseases of the bile passages, including the liver, gall bladder and pancreas. This proved a most interesting discussion and merely carried further the policy of the last few years in offering to the assembled physicians fewer scientific communications and more demonstrations.

As to the larger meeting of the American Medical Association, the new buildings of the Harvard Medical School proved a source of much interest to those physicians who had not hitherto had an opportunity of seeing them. On Tuesday a series of demonstrations was given at the new school buildings under the direction of Dr. W. T. Councilman, and in addition to these demonstrations an admirable exhibit of specimens, apparatus, drawings and photographs was shown in the Warren Museum in the Administration Build-

ing, and also in the Building of Anatomy. These exhibits and demonstrations were appreciated by the members of the society, not only in themselves, but as illustrative of certain of the best methods of modern medical teaching. The usual invitations to hospitals and institutions of interest to physicians were provided this year as heretofore.

The Shattuck Lecture of the year was delivered by Dr. Victor C. Vaughan, of Ann Arbor, Mich., on the subject, "A Contribution to the Chemistry of the Bacterial Cell and a Study of the Effects of Some of the Split Products on Animals." In this lecture Dr. Vaughan brought to the attention of his hearers certain new lines investigation is taking in the attempt to solve the underlying problems of metabolism, which no doubt will do much to shape medicine in the future. It is altogether advisable that such subjects, difficult as they may be of comprehension to the untrained mind, should be brought forward from time to time before an audience of practicing physicians in order that the rank and file may not be ignorant of certain of the most important modern methods of research. The annual discourse on "The General Practitioner and the Specialist" was this year delivered by Dr. John L. Hildreth, of Cambridge, and brought out much of practical importance to the physician and the public. Following the discourse the usual annual dinner was served, presided over by the president of the society, Dr. Arthur T. Cabot. Among the other speakers were President Eliot of Harvard University and the Hon. Henry N. Sheldon of the Massachusetts Bar.

MEDICAL NOTES.

OFFICERS OF THE AMERICAN GASTRO-ENTEROLOGICAL ASSOCIATION. — At the Ninth Annual Meeting of the American Gastro-Enterological Association, held at Boston, Mass., June 4 and 5, 1906, the following officers were elected for the ensuing year: President, Dr. H. W. Bettmann, of Cincinnati; first vice-president, Dr. Julius Friedenwald, of Baltimore; second vice-president, Dr. F. H. Murdoch, of Pittsburg; secretary and treasurer, Dr. Charles D. Aaron, of Detroit.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, June 13, 1906, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 38, scarlatina 19, typhoid fever 10, measles 76, tuberculosis 55, smallpox 0.

The death-rate of the reported deaths for the week ending June 13, 1906, was 18.00.

BOSTON MORTALITY STATISTICS. — The total number of deaths reported to the Board of Health for the week ending Saturday, June 9, 1906, was 224, against 188 the corresponding week of last year, showing an increase of 36 deaths and making the death-rate for the week 19.63. Of this number 122 were males and 102 were females; 219 were white and 5 colored; 143 were born in the United States, 74 in foreign countries and 7 unknown; 47 were of American parentage, 145 of foreign parentage and 32 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 53 cases and 3 deaths; scarlatina, 27 cases and 1 death; typhoid fever, 9 cases and 1 death; measles, 77 cases and 1 death; tuberculosis, 56 cases and 32 deaths; smallpox, no cases and no deaths. The deaths from pneumonia were 15, whooping cough 4, heart disease 19, bronchitis 4 and marasmus 7. There were 15 deaths from violent causes. The number of children who died under one year was 45; the number under five years 56. The number of persons who died over sixty years of age was 58. The deaths in public institutions were 83.

There were 2 cases and 3 deaths reported from cerebrospinal meningitis during the week.

AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION. — At the annual meeting of the American Medico-Psychological Association, being held at the Hotel Vendome, in Boston, this week, addresses of welcome on behalf of the state were given at the opening session by his Excellency Governor Curtis Guild, Jr.; Dr. Arthur T. Cabot, president of the Massachusetts Society; and Dr. Henry P. Walcott, chairman of the State Board of Health.

REPORT OF WORCESTER, MASS., BOARD OF HEALTH. — The annual report of the Worcester, Mass., Board of Health for the year 1905 gives certain statistics of interest. Seventy-five cases of scarlet fever were reported during the entire year, the smallest number since 1885, with but 4 deaths. The record for typhoid fever was 150 cases, with 26 deaths. It is interesting to note that the number of cases in excess of the previous year was 46, or precisely the number reported in the epidemic occurring in August, in a certain district of the city. A thorough investigation of this epidemic failed to disclose the initial case, but the source of the epidemic was established

as coming through milk delivered in that neighborhood. One hundred and thirty-two cases of diphtheria were reported with the rather large death-rate of nearly 10% due, it is supposed, to the prevalence of a particularly malignant type of the disease. Three hundred and thirty-eight cases of pulmonary and laryngeal tuberculosis were reported with 228 deaths. Of the 14 cases of cerebrospinal meningitis, 9 were fatal.

NEW YORK.

REQUEST TO ST. FRANCIS'S HOSPITAL. — Among other charitable bequests in the will of the late Peter Spies of New York, is one of \$1,000 to St. Francis's Hospital.

CENSUS OF THE BLIND. — Governor Higgins has appointed Dr. F. Park Lewis, of Buffalo, head of the commission to prepare a census of the blind in New York State which was created by the recent legislature.

COMMENCEMENT, NEW YORK UNIVERSITY. — The seventy-fourth annual commencement of the New York University was held at the Library and Auditorium building on University Heights, on June 6. In his address Chancellor MacCracken stated that in recent years the records of the university showed a marked falling off in the number of students of the three professions, medicine, law and divinity, and a corresponding increase in students taking up teaching as a profession. In the medical department (University and Bellevue Hospital Medical College) the Valentine Mott gold medal was awarded to August L. Beck, of New York, and the Lusk Memorial Science prize to Henry M. Lefkowitz, also of New York.

A REMARKABLE DISTANCE WALK. — On the remarkable pedestrian trip made by Edward Payson Weston, in which Mr. Weston, now sixty-seven years old, succeeded in walking from Philadelphia to New York, a distance of ninety-six miles, in twenty-three hours and thirty-one minutes, he was accompanied in an automobile by Drs. Robert Taylor and E. E. Smith, the one to care for his physical condition and the other to make scientific observations. The feat was undertaken in the interests of science to show the effects of such severe exertion on a man of the pedestrian's years, and to compare the results with the observations made by Prof. Austin Flint, on a similar trip, thirty-one years ago, when he was forty-six years old. It is notable that in his recent walk Mr. Weston beat his former time by twenty-five minutes.

CONFERENCE ON THE BEST LIGHT. — At a meeting of the Illuminating Engineering Society, held June 8, oculists and illuminating engineers met probably for the first time in this country in a discussion as to the kinds of light best for the eyesight. The discussion was opened with a paper by Dr. Louis Bell, of Boston, and the definite conclusion appeared to be accepted by all that brilliant electric lights in direct vision are harmful, and that in time it will be generally recognized that glare does not constitute beneficial illumination. Dr. Percy Fridenberg thought theatres, hotels, libraries and other public buildings were, as a rule, injudiciously lighted. There should be plenty of light, but the sources of it should be concealed as much as possible. Besides the important points of the intensity of the light and its placing, there was also the question of the heat from incandescents used at the desk. This had the same effect in producing dryness of the lids as the heat from a fire. Dr. N. J. Hepburn spoke in favor of subdued lights, and thought the yellow preferable to white light. Dr. William S. Dennett said there was no danger of getting too much light by artificial means. The main thing was to place the light properly and see that it was maintained steadily. The hall in which the meeting was held (the Edison Auditorium in West 27th Street) he thought was as beautifully lighted as any he had ever sat in. The lighting of the hall, it is stated, was done especially for the oculists. There were no lamps whatever about the speakers' platform, or in the line of vision of any one, a mellow radiance proceeding from overhead and filling the room with a very restful light.

Obituary.

MARY PUTNAM JACOBI, M.D.

THE death of Dr. Mary Putnam Jacobi occurred June 11 at her home in New York. She was sixty-three years old at the time of her death and had long been a sufferer from a chronic affection which for some years had entirely incapacitated her for active work. Dr. Jacobi was born in London, England, and was a daughter of Mr. George Palmer Putnam, the publisher.

She studied medicine at the Philadelphia Woman's Medical College and the New York College of Pharmacy, at a time when women in medicine were far less conspicuous than now. After completing her preliminary work in New York and Boston, she went to Paris and was graduated from l'École de Médecine to which she was the first woman to be admitted. Shortly after this she was married to the distinguished

Dr. Abraham Jacobi who survives her in the full activity of his powers. For the greater part of her life she practiced medicine in New York.

Dr. Jacobi was one of the most distinguished women physicians in this or in any country, and did much toward the progress of medicine in many lines of research. Not only was she a prolific writer on medical topics, much of which related to the nervous system, but she was also an ardent supporter of woman suffrage and a forceful writer on educational and allied topics. It will be remembered that a few years ago she was one of the speakers at the annual meeting of the Massachusetts Medical Society, and directed her remarks to a defence of vivisection. Although during the active period of her life she engaged in the practice of medicine, her interest in the more abstract and so-called scientific departments of her profession never flagged. She had a keen appreciation of the significance of the modern scientific movement in medicine and throughout her active life stood in the forefront of progress. In her death, quite irrespective of sex, the profession loses a distinguished member.

Miscellany.

THE INTERNATIONAL MEDICAL CONGRESS.

OUR contemporary, the *London Practitioner*, comments in the following somewhat pessimistic vein on the recent International Medical Congress: "Once again the International Medical Congress has come and gone, and once again it has passed like a ship in the night and left no mark on the sea of science. It was in some ways a fine pageant, and it is generally agreed that it was a pleasant picnic. It was abundantly evident that this was all most of the members wanted; the work was left to a few enthusiasts who took their pleasures sadly in telling each other what all knew beforehand they would say. The only sections in which even the appearance of scientific interest was kept up were those of medicine and hygiene, and in these, for the most part, the audience, if meet, was distinctly few."

"Usually the attitude of the audience towards the orator of the moment was that of Falstaff towards the 'old lord of the council,' who talked very wisely, but he regarded him not. Conversation was general, the president and officers setting the example. The object was to get through the business as speedily as possible. The hours of 'work' were nominally from 8.30 till 12; in reality the meetings did not begin till 9 or later, and were generally over by 11. In all the sections many whose names were down to read papers failed to put in an appearance; in some sections there was no one present but the officers; and one actually 'ceased upon the midnight with no pain' during the Congress, no meeting at all being held on the last day. It is not surprising, therefore, to learn that not a fraction of the communications on the program were read even by title.

"The Portuguese were in every way charming as hosts, and all who attended the Congress brought away with them the most pleasant recollection of the welcome they received from every one from the king and queen downwards. The Portuguese showed a delicate sense of courtesy in keeping their own language in the background. The German element was not so 'pushful' as it generally has been on previous occasions and showed a disposition to fraternize. The English, on the other hand, held themselves aloof in an isolation, which may in their eyes have been 'splendid,' but which to others seemed ungracious. As usual, this was due to want of organization.

"We have before had something to say as to the future of the International Medical Congress, and the recent gathering at Lisbon adds emphasis to the views we have put forward. The meetings are tending more and more to degenerate into international picnics, which, however pleasant in themselves and useful in bringing fellow workers acquainted with each other, do nothing whatever for the advancement of science. The original conception of the Congress was that it should be at once a center for the exchange of scientific discoveries and ideas, and a means of promulgating *urbi et orbi*, with the whole authority of the profession, the latest teachings of medical science in regard to matters concerning the suppression of disease, the maintenance of public health, and the action that should be taken by states and rulers to give practical effect to those teachings. To all who are really interested in the welfare of the human race it is painful to see how far the Congress has drifted from this intention. From the position of a Universal Council of Medicine it has fallen to that of a trade exhibition. For any higher purpose, indeed, the Congress has become useless. Men go to the meetings largely not to learn, for they know already, through the channels of information which are now almost embarrassingly numerous, all that their colleagues and rivals have to teach; but to show themselves, and to impress on the public mind the fact that any charitable suggestions as to their professional extinction are, as Mark Twain said of the rumor of his own death, 'greatly exaggerated.' This is the microbe that lurks in all congresses of whatever kind. Its effects can be resisted by a sound constitution, but this is just what the International Medical Congress no longer possesses. It has, in fact, only a very thin-spun thread of continuous life, and this may be at any time 'slit' by the 'blind fury with the abhorred shears'.

"At Lisbon the proposals for the establishment of a Permanent Committee, which should be the visible link of unity and continuity, and for the increase of the interval between meetings to five years instead of three, do not seem to have been seriously discussed. It was, indeed, resolved that at the next Congress, to be held at Buda-Pest, in 1909, no further invitation for a definite date should be received. But nothing has been done to place the organization of the Congress on a

really international basis, and at Buda-Pest, as at Lisbon, the meeting will be a social function that will rejoice the hearts of local hotel keepers, and science will wear motley to make a medical holiday."

Correspondence.

SOME TRUTHS AND SOME FICTIONS.

NEW YORK, MAY 30, 1906.

Mr. Editor, It has seemed to me for many a day, and with passage of time the conviction is stronger, that the practice of medicine would be more satisfactory from every point of view, if a few truths were insisted upon again and again until both patients and physicians were in thorough accord.

First among these truths is the fact that though the diagnosis is up to date, correct, the results of treatment may be different. At one time they may be entirely successful, again only partially so, or, indeed, wholly negative and the patient remains unimproved.

In ultimate analysis, so far as we know at present, this depends upon what is understood as personal peculiarity, individuality. It exists, probably, always. No two persons are alike absolutely in body or in mind; in organ or function. How can we expect, how should we believe, that in two only apparently similar cases we shall obtain similar effects from the use of a particular drug, or agent? If this be true, and I am confident it is, why not impress upon every one of our patients the fact that every good physician, even the very wisest and best, must invariably *grasp* somewhat, try to find out by faithful, intelligent and judicious trial, what is best to do in any given case.

While this truth should be accepted, it should also be affirmed the vast and most important difference between the search for truth of the level-headed, instructed and competent man and that of the ignorant, or honest enthusiast. Where shall we put the class of intentional frauds who prey continuously upon the immense number of gullibles and unreasoning? In the abyss. Alas! what can we do but virtually preach character and brains.

This letter is inspired, notably, by Dr. F. C. Shattuck's able address before the Boston Homeopathic Medical Society, March 1, 1906.

BARBARA ROBINSON, M.D.

SUBDELTOID BURSTS: A PATHOGNOMONIC SIGN FOR ITS RECOGNITION.

105 WISE 7TH STREET, NEW YORK, June 9, 1906.

Mr. Editor, I have read with pleasure and profit the scholarly article in your issue of May 31, upon Subdeltooid Bursts. Dr. Goldman has made a most careful study both anatomically and surgically. The disease is, as he says, by no means a rare one. And since there are hardly a half-dozen other affections for which the practitioner is liable to mistake this, perhaps the present note may not prove devoid of interest.

In my own surgical clinic, during the past eighteen years, as occasion arose from time to time, I have found the correct which comes to the surgeon is not made hard to the patient, from certainty of diagnosis, and of the following simple procedure.

Let the arm, as I had away from the side a few inches, and the elbow rest upon the doctor's shoulder. In the latter place, pressure, extreme abduction, the arm is expected will be so directed, with the protection of the pronator process, a direct or quite to be beyond reach of the point of pressure. The expected sore spot will suddenly have disappeared, whereas this position will not, should the tenderness on palpation persist, and the other causes of it in this region.

ROBERT H. M. DAWSON, M.D.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, MAY 26, 1906.

| CITIES. | Reported deaths in each. | Deaths under five years. | CITIES. | Reported deaths in each. | Deaths under five years. |
|---------------------|-----------------------------|-----------------------------|---------------------|-----------------------------|-----------------------------|
| New York | 1,490 | 459 | Quincy | 6 | 1 |
| Chicago | 590 | 169 | Waltham | 12 | 2 |
| Philadelphia . . . | 519 | 144 | Gloucester . . . | 9 | 1 |
| St. Louis | — | — | Pittsfield | 6 | 1 |
| Baltimore | 193 | 50 | Brookline | 4 | — |
| Cleveland | — | — | North Andover . | 8 | 0 |
| Buffalo | — | — | Chicopee | 10 | 5 |
| Pittsburg | — | — | Northampton . . | 7 | 0 |
| Cincinnati | — | — | Medford | 4 | — |
| Lynn | — | — | Beverly | 5 | — |
| Washington | — | — | Hyde Park | 2 | 1 |
| Providence | 71 | 22 | Newburyport . . . | 9 | 1 |
| Boston | 214 | 60 | Leominster | 3 | — |
| Worcester | 36 | 10 | Melrose | 3 | 0 |
| Fall River | 34 | 14 | Woburn | 3 | 1 |
| Cambridge | 31 | 9 | Marlborough . . . | 1 | 0 |
| Lowell | 36 | 10 | Westfield | 3 | 1 |
| Somerville | 29 | 6 | Peabody | — | — |
| New Bedford . . . | 28 | 9 | Revere | — | — |
| Springfield | 24 | 1 | Clinton | 2 | 0 |
| Lawrence | — | — | Attleboro | — | — |
| Somerville | 16 | 5 | Adams | 5 | 1 |
| Holyoke | 12 | 5 | Gardner | 1 | — |
| Brockton | 12 | 4 | Milford | — | — |
| Malden | 8 | 1 | Weymouth | 4 | 1 |
| Salem | 16 | 8 | Franklin | 2 | — |
| Chelsea | 14 | 4 | Watertown | 4 | 1 |
| Haverhill | 14 | 6 | Plymouth | — | — |
| Newton | 5 | 1 | Southbridge | 3 | — |
| Fitchburg | 28 | 3 | Wakefield | 1 | — |
| Taunton | 11 | 3 | Webster | — | — |
| Everett | 1 | — | | | |

CHANGES IN THE MEDICAL CORPS U. S. NAVY
FOR THE WEEK ENDING JUNE 9, 1906.

J. M. MOORE, passed assistant surgeon. Detached from the Naval Medical School, Washington, D. C., June 15, and ordered to report for examination for promotion, and then to await orders.

F. M. SHOOK, assistant surgeon. Detached from the Naval Hospital, Mare Island, Cal., and ordered to the Navy Yard, Mare Island, Cal.

A. J. GEIGER, assistant surgeon. Detached from the Navy Yard, Mare Island, Cal., and ordered to Washington, D. C., June 15, for examination for promotion, and then to wait orders.

G. M. MEYERS, J. W. BACKUS, assistant surgeons. Detached from the Naval Medical School, Washington, D. C., June 15, and ordered to report for examination for promotion, and then to wait orders.

T. H. STREETS, medical director. Detached from command of the Naval Hospital, Naval Home, Philadelphia, Pa., and directed to wait orders.

G. PICKRELL, surgeon. Ordered to the "Franklin."

D. R. KEER, surgeon. Detached from the Naval Medical School, Washington, D. C., June 15, and ordered to the Naval Recruiting Station, Chicago, Ill.

L. L. VON WEDEKIN, surgeon. Detached from the Naval Recruiting Station, Chicago, Ill., and ordered to wait orders.

F. A. ANDERSON, passed assistant surgeon. Detached from the Naval Medical School, Washington, D. C., June 14, and ordered to the "Arkansas" temporarily, and thence home to wait orders.

U. R. WEBB, passed assistant surgeon. Detached from the Naval Medical School, Washington, D. C., June 15, and ordered to the Naval Hospital, Portsmouth, N. H.

H. SHAW, assistant surgeon. Detached from the Naval Medical School, Washington, D. C., June 15, and ordered to the Naval Hospital, Philadelphia, Pa.

R. H. MICHELS, assistant surgeon. Detached from the Naval Medical School, Washington, D. C., June 15, and ordered to the Naval Recruiting Station, Kansas City, Mo.

F. W. TYREE, acting assistant surgeon. Detached from the Naval Recruiting Station, Kansas City, Mo., and ordered home to wait orders pending expiration of term of appointment as acting assistant surgeon, July 1, 1906.

G. M. MAYERS, assistant surgeon. Detached from Naval Medical School, June 15, and ordered to Navy Yard, Washington, D. C.

F. E. CAMPBELL, assistant surgeon. Ordered to the "Constellation" and to additional duty at Naval Training Station, Newport, R. I.

G. H. MCCONNOR, assistant surgeon. Detached from the "Constellation" and ordered to the "Missouri."

C. E. RYDER, assistant surgeon. Detached from the "Missouri," and ordered home to wait orders.

J. B. DENNIS, surgeon. Detached from the Naval Proving Ground, Indian Head, Md., and ordered to command the Naval Hospital, Pungent Sound, Washington, with additional duty at the navy yard at that place.

F. M. MUNSON, assistant surgeon. Detached from the Naval Medical School, Washington, D. C., and ordered to the Naval Proving Ground, Indian Head, Md.

RECENT DEATHS.

DR. J. WESLEY RICHARDS, of New York, died on June 3, from pneumonia, at the age of thirty-seven years.

DR. JAMES G. LA ROE, of Greenpoint, Borough of Queens, New York, died on May 30, from cerebral apoplexy, at the age of fifty-nine years.

BOOKS AND PAMPHLETS RECEIVED.

A Case of Hysterical Anuria. By Edgar Garceau, M.D., and Joseph W. Courtney, M.D. Reprint.

Collected Studies on Immunity. By Prof. Paul Ehrlich and his Collaborators. Translated by Dr. Charles Bolduan. New York: John Wiley & Sons. London: Chapman & Hall, Ltd. 1906.

Notes on Surgery for Nurses. By Joseph Bell, M.D., F.R.C.S. Edin. New York: William Wood & Co. 1906.

Music and Poetry. Their Relation to the Medical Life. By A. W. Brayton, M.D.

Transactions of the American Pediatric Society. Vol. xvii. New York: E. B. Treat & Co. 1906.

Introduction to Materia Medica and Pharmacology, including the Elements of Medi-Pharmacy, Prescription Writing, Medical Latin, Toxicology and Methods of Local Treatment. By Oliver T. Osborne, M.A., M.D. Philadelphia and New York: Lea Brothers & Co. 1906.

Bulletin of the Ayer Clinical Laboratory of the Pennsylvania Hospital. No 3, June, 1906.

Catarrhal Deafness. (With report of 400 Chronic Cases.) By Dr. Sargent F. Suov. Reprint.

Twenty-eighth Annual Report of the Board of Health of the City of Lowell for the Year Nineteen Hundred and Five.

Proceedings of the American Medico-Psychological Association at the Sixty-first Annual Meeting, held in San Antonio, Texas, April 18-21, 1905.

The Urethrotomies and Kidney Capsulotomy in Diseases and Injuries of the Urinary Organs. By Reginald Harrison, F.R.C.S. London: John Bale, Sons & Danielsson, Ltd. 1906.

The Operative Treatment of Prolapse and Retroversion of the Uterus. By J. Inglis Parsons, M.D., M.R.C.P., M.R.C.S. Illustrated. London: John Bale, Sons & Danielsson, Ltd. 1906.

Operative Otolary. Surgical Pathology and Treatment of Diseases of the Ear. By Clarence John Blake, M.D., and Henry Ottridge Reik, M.D. Illustrated. New York and London: D. Appleton & Co. 1906.

Psycho-encephalonasthenia or Cerebrasthenia Simplex, and Psycho-encephalonasthenia or Cerebrasthenia Insaniens. By Charles H. Hughes, M.D. Reprint.

Railway Brain Strain of and Brain Strain Regulation of Railway Employees. By C. H. Hughes, M.D. Reprint.

State Charities Aid Association of New York. First Report of the Sub-Committee on After Care of the Insane. 1906.

A Practical Method of Abolishing the Cause of One Quarter of the Unnecessary Blindness in the United States. By F. P. Lewis, M.D. Reprint.

Commercialism, Professionalism and Their Mutual Relations. A Series of Editorial Articles. Reprint.

Twentieth Annual Report of the State Board of Health and Vital Statistics of the Commonwealth of Pennsylvania. Harrisburg, Pa. 1906.

Health's Manual of Minor Surgery and Bandaging. For the Use of House-Surgeons, Dressers and Junior Practitioners. Thirteenth edition. Revised by Bilton Pollard, F.R.C.S. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1906.

The Practical Medicine Series. Comprising Ten Volumes on the Year's Progress in Medicine and Surgery. Under the general editorial charge of Gustavus F. Head, M.D. Vol. III. Series 1906. Chicago: The Year Book Publishers.

Address.

HOW PROGRESS COMES IN MEDICINE. *

BY FREDERICK C. BRATTUCK, M.D., BOSTON.

DURING the past year there has been no very conspicuous advance in medicine. Advance there has been, of course, but it has been all along the line rather than in any one direction. I propose, therefore, to-night to attempt roughly to sketch, as far as the limitations of time and my knowledge permit, some features of the progress of medicine in the past, its irregularity, apparent lack of logical sequence, dependence on the progress of science (knowledge) as a whole, the way in which advance along a very narrow line may lead to advance along the whole front.

We may for a moment compare the whole body of scientific workers to an army determined to enter into and possess the empire of ignorance, a country of vast extent and presenting every conceivable physical difficulty to advance and occupation. This is one obstacle. Another lies in the fact that the army has not — nor can it have — an organization comparable to that of the ordinary army with its commander-in-chief, chief of staff, corps and division and brigade commanders, although it has the corps and divisions. Each has its leaders, who owe their position solely to merit. Influence, dynastic, political, family — does not count. Promotion is from the ranks. The rise to high position may be very rapid; deposition is occasionally correspondingly so. Far more than in even Napoleon's army *la carrière est ouverte aux talents*. The freest criticism is permitted, nay, encouraged; government is largely by discussion based on observation and experiment. There are many scouts and skirmishers who are necessary to any advance, even of a division. There are also, alas, camp followers. As organized to-day we may distinguish six army corps, anatomy, physiology, chemistry, physics, pathology, clinical history.

Permit me now, dropping analogy, to call your attention to some of the lines of march which have been traversed, some of the territory won, some of the means by which it has been gained.

Gross anatomy was about as well known, of course, not so widely known three hundred years ago as it is to-day. Medicine had got about as far as it could until the knowledge of a heart, of blood, bright and dark, of blood vessels, was vivified by Harvey who without instruments of precision by experiments on living animals, by clear sight and straight thought, solved the mystery of the circulation of the blood. This step in physiology, in knowledge of function, threw a flood of light backward on structure and was indispensable to further progress. Harvey, a practicing physician, paved the way for Malpighi, anatomist, father of histology, who saw what Harvey had no means of seeing — the capillary circulation. He was contempor-

ary with Leeuwenhoek, the lens-maker, improver of the microscope, and then the microscopist making important contributions to the structure and function of the living organism. Here we see one of the first contributions of physics to medicine. It is remarkable that Leeuwenhoek could do what he did with the simple microscope. He had been in his grave more than a century before any essential advance was made in the compound microscope, gradually leading up to the instrument which has played such a vital part in the progress of modern medicine, and to which I shall again have occasion to allude.

Richat, indeed, performed his great work and founded the anatomy of the tissues without the aid of the microscope, so imperfect in his day that he thought it more likely to promote error than to discover truth. The ultimate anatomical component of the tissues and organs alike, the cell, though seen and described by Robert Hooke long before, was first seen in its developmental relations in plants by the botanist, Schleiden. Schwann extended this knowledge into animal life. Thus was founded the physiology of the cell. Fresh impetus was given to embryology, so deeply indebted to Caspar Friederich Wolff of the previous century, and the way was smoothed for Virchow and the pathology of the cell.

In the past hundred years the anatomy of the central nervous system has not been illuminated by anatomists. The microscope showed that the gray matter is composed mainly of cells, the white of fibers. No mere anatomical study could possibly have differentiated the function of gray and white matter, the anterior and posterior nerve-roots, the motor and sensory nerves running in a common cable. Charles Bell, the surgeon, by vivisection, made a great step in physiology and thus advanced anatomy. Marshall Hall, the physician, and Johannes Mueller, the physiologist, again made a further advance in explaining reflex action and its mechanism. Waller, the physiologist, teaches us the lesson of the degeneration of nerve fibers separated from their centers. Anatomy never could have taught us the great lesson of cerebral localization, nor could animal experimentation or physiology alone. The starting point came from the clinician who, through careful comparison of the experiments of disease on the human being during life and after death, pointed out the way for physiological experiment to follow. Critical clinical study first, pathological anatomy second, physiology third, anatomy fourth, structure and function, function and structure indissolubly bound together, advance in one must lead to advance in the other.

Time does not permit me to take up chemistry by itself. In other connections I shall allude to the help it has given to medicine and its progress. Chemistry looms large in the future and we must look to the biological chemist to solve or aid in the solution of some of the largest problems which confront us to-day.

Morgagni may be regarded as the founder of

* Oration on medicine at the fifty-seventh annual session of the American Medical Association at Boston, June 3-8, 1900.

pathological anatomy, John Hunter of its greater outgrowth — pathology. Pathological anatomy, however, remains sterile until wedded to clinical observation. Laennec is the high priest who officiated at this alliance. Borrowing percussion from Corvisart, who resurrected it from the grave of Auenbrugger, and, with the aid of physics, developing mediate auscultation, he compared the signs of thoracic disease in life in the ward with the changes wrought after death, and in ten years performed one of the most stupendous feats in medicine, putting the recognition of cardiac and pulmonary disease in the living at a level from which it had advanced little for sixty-odd years, when the physicist with his x-rays made a new advance. Not only so, but Laennec's conception of tuberculosis in the lungs was far more true than that to which a too exclusively anatomical point of view led Virchow, whose great authority again led astray Buhl, Niemeyer and a host of pathologists and clinicians. How Laennec's view of the unity of tuberculosis was confirmed and extended I shall touch on later. Louis follows close on Laennec and enforces the lesson of the value of method and accuracy in the study of disease. It is he who inspires his young American pupils to separate typhus and typhoid fever. Neither pathological anatomy nor clinical study alone sufficed; in conjunction they succeeded. The power to distinguish between the two diseases clinically has done much to bring about the practical extinction of the contagious typhus. In very recent times the clinical resemblance of typhoid fever, the estivo-autumnal form of malaria and of trichiniasis was in some cases so close as to render timely diagnosis difficult, to say the least. Laveran's discovery of the plasmodium, Widal's of the reaction bearing his name and Brown's of eosinophilia in trichiniasis go far to insure diagnosis, to aid treatment, to promote preventive medicine. Laveran directly aided diagnosis, but he also paved the way for Theobald Smith's brilliant demonstration of the cause of Texas cattle fever, of the rôle played by insects in the transmission of certain infections to man and animals. Thus the accusation of Manson of mosquitoes in general has ended in the conviction of some species as necessary links in the development, first, of malaria, next of yellow fever. The mysterious sleeping sickness of man and the tsetse fly disease of horses in Africa are found to rest on a similar pathology. The alarming spread of the sleeping sickness coincident with opening up the country and increased travel is noteworthy. In 1873 Obermeier discovered the spirillum of relapsing fever. In the African form of the disease, at least, it seems to have been recently conclusively proved that a tick plays the part of intermediate host. The life history of the *tenia* was worked out by close observation and experiment without much aid from the microscope, such is their size; but the analogous life history of these minute forms of life and their relation to disease must, perforce, await the modern microscope. These are some

of the latest triumphs in the application of bacteriology to medicine.

Bacteriology was brought into being by the conjunction of the perfected microscope; the chemist Pasteur who gave the death-blow to the doctrine of spontaneous generation; another chemist, Hoffman, who made his own fortune and then promoted the welfare of humanity by his discovery of the anilin dyes which enable us to see and distinguish organisms, many of which are otherwise invisible or unrecognizable; and the physician, Koch, whose solid media on plates so greatly facilitated the isolation and perpetuation of pure cultures of this and that organism. Cut out any one of these four links and we should not be where we are. Laennec's conception of the unity of tuberculosis of the lungs is confirmed, and it is proved that lupus and scrofula, which I have heard the great Hebra suggest to be manifestations of syphilis in the second or third generation, are tubercular in nature.

More than a century has elapsed since Edward Jenner, the provincial practitioner, conferred one of the greatest boons humanity has ever received by rendering it possible to practically annihilate the loathsome and deadly smallpox. The great pox remains a mystery — *pace* the *spirocheta pallida*. We anxiously await some discovery which will do for scarlet fever and measles what Jenner's discovery did for variola, what antitoxin has done for diphtheria. We are still in outer darkness as to the pathology of these eruptive infections, though the studies of Councilman and his pupils fill us with hope.

The demonstration by Fitz of the relation of the appendix to peritonitis and his work on the pancreas involve another combination; accurate pathologic knowledge, clinical observation, unusual critical acumen, and the experience of the past as collected and recorded in the library, a factor in the progress of medicine the importance of which is daily winning recognition. Would that we had with us to-day in the flesh James R. Chadwick, to whose enthusiasm, energy and devotion in building up the Boston Medical Library not this community alone, but the country at large is deeply indebted. His interest, counsel and duplicates were always at the service of infant medical libraries to many of which he was wet nurse.

Between Sir Humphry Davy, chemist, and Morton, dentist, the possibility of surgical anesthesia lay in an almost dreamless sleep for half a century. How sudden the awakening, how momentous its effects! Surgery ceases to be a last resort. Half its terrors are shorn away. Bacteriology shears away the other half, and to-day scarce an organ, cavity or part remains a sanctuary of disease. Anatomy, physiology, pathology, are all enriched by the surgeon's knife used for beneficent purposes on the living man,—literally vivisection. I specify alone tubercular peritonitis, supposed to be necessarily fatal until the surgeon, operating under the false diagnosis of ovarian cyst, proved that

it may be recovered from. Some cases of tubercular peritonitis need the knife; but many cases get well without any sort of operative intervention. For this advance, I repeat, we have to thank the surgical clinician.

The story of myxedema seems to be one of the most thrilling in medicine, and serves my present purpose in that it shows how the searchlight of clinical observation may illuminate dark places in physiology and pathology. The anatomist finds and describes the ductless glands. The physiologist is at a loss to explain their function. The thyroid is a riddle. Its endemic enlargement, often associated with faulty development alike bodily and mental, is noted, excites interest and speculation, but is another riddle. The great clinician, Gull, describes "A Peculiar Cretinoid State Supervening in Women in Adult Life." He puts forward no theory, but describes merely what he sees, a change coming over previously healthy grown women, producing a state similar to that of the cretin, and quite apart from endemic influence. He opens eyes which so easily overlook what is directly under them. Ord makes the first autopsy, and from the mucin reaction in the swollen tissues cuts the name down to one word, myxedema, still mainly descriptive. So also is Charcot's name, *cachexie pachydermique*. Clinical surgery now steps on the scene, and we see that the result of the extirpation of the thyroid for goiter, as reported by Kocher and Reverdin, is identical with myxedema. Thus the pathology of the condition is rendered clear, and for the first time we get a definite idea as to the function of the thyroid. The riddle is largely solved. Very soon myxedema becomes one of the most gratifying diseases to treat, and the remarkable fact appears that neither cooking nor gastric digestion notably impairs the efficacy of the gland. It is noteworthy that this great advance comes purely from clinicians, medical and surgical. The experiments of Schiff and Horsley on monkeys, although interesting and confirmatory, are not essential stones in the structure. The evidence is sufficiently complete without the aid of what is ordinarily termed the laboratory, and here it may be remarked that the tendency of the present day is too much toward the limitation of the term "scientific scheme" to that part of investigation carried on either apart from hospitals or by men not directly dealing with the sick. The work of the clinician may be every what as scientific as that of his laboratory brother. The purely laboratory man has the advantage that he can inaugurate, systematize and govern his experiments, most of which must be on animals. The clinician has the advantage that the experiments performed for him by disease are on human beings and are oftentimes of such a nature as cannot possibly be made artificially. On the other hand, the clinician is apt to find his time and strength so drawn on by individuals clamorous for relief that his highest work suffers. Does medicine afford a better illustration of the interdependence of workers in different fields than

lies in the story of myxedema? Great as was the specific discovery of the function of the thyroid, still greater was its direct outgrowth, the broad fact of internal secretion, the sole function of the ductless glands, perhaps also an important function of glandular structures pouring out a secretion through a constant and definite channel.

Before turning aside from the work of the clinician I should like to mention one other advance which has been made and several riddles which still confront us. In the index of Watson's Practice, a book not read to-day as much as it should be, American edition of 1872, neuritis is found only as optic neuritis. James Jackson had recognized paralysis due to alcohol. Buzzard popularizes the knowledge that the trouble is seated in the peripheral nerves in these cases, and that alcohol is only one of many toxic agents liable to cause this result. How easy it is to-day to recognize multiple neuritis, usually to determine its cause in any given case; but there were just as many cases of it fifty years ago as there are to-day. Jaundice was formerly a disease. It is now a symptom only. Rheumatism we now recognize as a tangled skein, the threads of which we are just beginning to unravel. We are dissatisfied with diabetes as a final diagnosis, and are groping for light which may enable us to differentiate the causes of sugar as we have those of bile in the blood and the tissues. We suspect an infection behind purpura. We speak of purpura simplex and purpura hemorrhagica. We know that there are many infections which, when intense, are liable to cause hemorrhage. Our ignorance is dense as to the part played in any case by individual peculiarity as well as to other features of many cases of purpura.

From the side of physics has come one of the most notable of recent advances. Roentgen rays are doing much for the clinician, medical as well as surgical. Are there η - and π -rays? How long must we wait for their discovery? What will be their practical application? Physics, again, has given us the ophthalmoscope and exposed a prolongation of the brain to direct vision. The aurist owes it much. It enables us to illuminate the interior of the bladder, larynx and trachea, and other cavities, to localize pathological processes, to watch their progress in the living body, intelligently to relieve and cure conditions which otherwise and formerly were necessarily left to that *vis nativa* which may be *medicatrix*, but is too often *lethalis*.

The debt of medicine to all these half truths which are too indiscriminately classed under the terms quackery or charlatanism is real and should be recognized. We believe homeopathy to rest on assumptions unfounded in fact untenable to-day. The most bigoted of us, however, for there is a bigotry of science as well as of religion, cannot deny that homeopathy has advanced medicine, leading to a clearer knowledge of the limitation of the therapeutic action of drugs, of their uses and abuses.

The power of suggestion, the influence of mind

over body, whether exercised through hypnotism, mind cure, faith cure, Christian science, what you will, throws a flood of light on physiology and pathology, stimulates the study of experimental psychology, illuminates the influence of the nervous system on the circulation and thus on nutrition. An eminent orthopedist recently classed the natural bone setters, so-called, as forerunners of science, at a time when ignorance as to the action of trauma and disease on joints was profound. They, relying on common sense and observation alone, achieved results which science, timid from knowledge of its ignorance, failed to achieve. There is always a germ of truth in every form of irregular (unscientific) healing — a fact which it behooves us to recognize and be ready to apply.

The services of a laywoman, Lady Mary Wortley Montagu, in the introduction of inoculation for smallpox, bitterly fought by our profession of the time, should not be passed without recognition.

All the sayings of a wise man are not necessarily wise, and Solomon, probably when tired or dyspeptic or worried with some family strife, said that there is nothing new under the sun. New things, certainly new in their relation to us, are coming forward every day. Not only so, but the new things spread abroad with wonderful rapidity in these telephonic days, becoming common property.

I have brought you nothing new to-night. I have simply tried to illustrate from the history of the past, how imperfectly, I only too well realize, the apparently inconsequent advance of knowledge, the correlation of the sciences, the way in which a fact seemingly perhaps unimportant is always potentially fruitful, often bearing fruit of a totally unexpected kind, it may be after many days. In a positive sense we know more than our predecessors; in a relative sense we may be said to know less. The farther we advance into the empire of ignorance the larger we find it to be, each mountain peak showing higher peaks in the distance.

Life consists in the exercise of our faculties, happiness in the performance of duty and in achievement. We have an abiding faith that "all things work together for good."

Original Articles.

OBSERVATION HOSPITAL FOR MENTAL DISEASE.

SOME REASONS WHY THERE SHOULD BE ONE IN BOSTON, OR AT LEAST AN OBSERVATION WARD; STATISTICS OF THOSE AT ALBANY AND GLASGOW.

BY L. VERNON BRIGGS, M.D., BOSTON.

For some years the project of an observation hospital for mental disorders in the city of Boston has been discussed, but no concerted movement among physicians has ever taken place, owing to various discouragements, and to their difference of opinion, as to the best plan for bringing relief

to the class of patients who in the early stages of mental disorder have now no place to go for treatment. Quite a large number of physicians consider that the present hospitals for the insane are sufficient, and they answer those who favor a special hospital by saying that the present institutions for the insane are able to take care of all people in all stages. Dr. George F. Jelly, senior examiner of the Institutions Registrations Department, nearly ten years ago recommended a detention hospital for ten patients, near or adjoining the Court House; and in his reports since then he has referred to the urgent necessity of a detention or observation hospital. I think that he may be called the pioneer of such a movement in this city, and no one to-day is better able to judge of its necessity or the best plan for carrying it out, and any movement in this line should be done under his wise direction.

In the first place, most of the present institutions for the insane are situated at inconvenient points, and have so many chronic cases that most people in the early stages are not willing to go to them.

The internes who are in insane hospitals as a rule see only the chronic cases, and have no opportunity of observing or studying the early stages of mental disease. There is no provision at the present time for systematized study of mental diseases in their early stages by physicians or students, except in the one department of the Boston Dispensary which has the only strictly mental clinic in the city, and, so far as I know, in any other city in the United States, most of the clinics being mixed, — nervous and mental. It is the studying of the incipient cases which seek relief in the dispensary that impresses one with the necessity of an observation hospital, where patients in the early stages may be sent, and their disease often aborted; where the dangerous patient or the possible suicidal patient may be taken for protection from himself for a few days; where the officer may send the lunatic arrested on the street, for immediate care and treatment, and where the physician or student may have an opportunity of studying these early cases which is now denied him. The cases which find their way to the hospitals for the insane are usually so far advanced that they are committed as insane, and are well along in the progress of their disease. Seldom a day passes during which clinics are held in the mental department of the Boston Dispensary, when one of the three physicians to that department, Dr. A. C. Jelly, Dr. L. A. Roberts or myself, do not feel the crying need for such a hospital. Many patients come to the dispensary to-day, or are attended at their homes by physicians, who have to remain in their present surroundings which often are the cause of their trouble, until such time as they are insane enough to commit, for no treatment can be carried out in the homes of many of these patients, and the physician is powerless to do anything but wait for them to get insane enough to commit to a large insane hospital. Again, if an insane individual is arrested on the street, in

the evening or late afternoon, there is no hospital that will receive him. He has to be put in a padded cell at the tombs, if violent (or, if a woman, in the House of Detention), and there remain until the following day when he is examined and committed, and transferred to some insane institution; twenty-four hours in an acute case may prove fatal, certainly to the mind, if not to the body. How much more humane to send these emergency cases to a hospital where they will have immediate care and protection or treatment.

So far, the general hospitals have refused to take apparently insane patients even for a day, unless they have injured themselves and require surgical treatment. There is no place where you may send such cases, excepting to the insane hospitals, and many of them are not insane, for their mental disorders are often the result of disturbed metabolism or acute auto-intoxication, or of disturbed habits of mind and body, brought about from their surroundings, or improper food and sleep. I do not believe that a separate building on the grounds of any insane institution is going to give relief to these people. They would prefer to wait until nature reacts and they recover, or become worse and are obliged to be sent to the main building of such an institution. The class that would go to an observation hospital connected with an insane institution will be of two kinds:

First, The voluntary patient, who is often a patient who has been there before, and feels a recurrence of his disease coming on and applies for relief.

Second, The occasional patient who is incapacitated, but not seriously ill, whose family find his support burdensome, or his care confining and urge him to go, or send him to the hospital instead of keeping him until he recovers, or is insane enough to commit.

I know that this advance in the treatment of those mentally ill will meet with a great deal of opposition, as every new movement does. One physician, president of one of our neurological societies, told me the other day that he did not believe in such a hospital, that it was not necessary, that he did not believe in the Haymarket Square Relief Hospital; he thought the general hospitals could take care of all the patients without loss of time sufficient to endanger the life of the patient; that if I asked for an observation hospital, I might as well ask for a temporary hospital or stand on every corner of the street, with physicians stationed there to take particles out of people's eyes, that there would be no limit to the number of hospitals if things kept on.

It is only a few years since mental diseases were made a part of the obligatory course in any of our medical schools, it was entirely optional as one of the several studies students could choose from. The result is to-day that the average physician in general practice knows little or nothing about mental diseases, and as for having charge or care of mental cases, he has

no such opportunity in the general hospitals, and the only men who have any valuable experience are graduates of our largest medical schools, who see a few such patients at medical lectures. Some students who fail to get appointments in the general hospitals drift to the insane institutions as internes for a year or so. This does not mean that these men are not as bright or as efficient as those that get appointments in general hospitals, but it does mean that the standard to-day is for the so-called physical to come first and the so-called mental diseases last, because in general practice the student seeks for the experience which is going to be of most value to him in his practice; and the general hospitals have everything but mental diseases, and the mental hospitals have only the general diseases that occur in mental cases. So to-day, the externe and interne who have the advantage of hospital experience are launched into the world often without being able to recognize a mental case when they see it. This would not be so had we an observation hospital or observation ward connected with the general hospitals. Comparatively little is known to-day about mental diseases, and if the field is once properly opened to the students and professors, more material would be available for progressive medicine than in almost any other direction, and a larger proportion of humanity benefited.

In the report of the superintendent of St. Luke's Hospital, New York, for the year ending Sept. 30, 1904, I find among the applications declined under Rules of Admission (which include contagious, incurable and unsuitable headings), under the heading "Ensuitable," "Insanity, six cases." Under the Rules of Admission the insanity cases are included in the list of those which are inadmissible. This is only an example of the rules of most, if not all, general hospitals. People must get over the idea that a diseased brain is something to be ashamed of. They are not ashamed of having a diseased heart, or lungs or kidneys, and to have the physician limit them in these directions; why should they not welcome and follow his advice without being ashamed when he warns them that they have weak brains, or that they must not overtax their brains. If the toxin or poison originates in some organ outside the control of the central nervous system, the disease is not fully a disease of the brain. Dr. Paton says: "Leaving out of consideration for the moment the adventitious lymph spaces, practically nothing is known in regard to the passage of the blood through the brain."

New York is alive to the fact that insanity is constantly increasing. In 1892 there were 47,275 patients in the insane institutions of the state, a ratio of one person to 377 of the population of the state. On June 1, 1905 there were 27,300 patients in the insane institutions, a ratio of the insane to the general population of 1 to 299. The number of cases developed during the year was 5,346. Of all treated in hospitals, 1,412 recovered and 1,257 were discharged in an

improved condition. New York State asks for \$2,000,000 for the improvements desired this year by the state hospital managers and \$4,950,000 is asked of the legislature for the support of the insane the coming year.

Stewart Paton, M.D., of the Johns Hopkins University, and director of the laboratory of the Sheppard and Enoch Pratt Hospital, Towson, Md., in his recent valuable book on Psychiatry, goes into the subject of observation hospitals or wards connected with general hospitals most carefully, and I can only briefly quote from his exhaustive work on the subject. He says: "Unfortunately, as a rule, so few individuals afflicted with insane ideas come under the observation of the alienist until the systematization is more or less complete and immobile, that little satisfactory progress has been made in the study of the development of these phenomena. For this reason the large amount of material which presents itself at the dispensaries of any of the large city hospitals is of greater value for study than are the cases which are admitted to our hospitals for the insane. In practically every case of alienation which comes under observation early in the development of the malady, it will be found that the patient frequently complains of changes in the organic sensations of such a nature as to interfere with the integrity of the sensations upon which the idea of individuality depends." "Unfortunately, in institutions in the United States, with few exceptions, the detention character is still primary, and opportunities for successfully treating patients are still few and incomplete, inasmuch as the existing organization and imperfect equipment do not make it possible to give them the benefit of the best medical skill. Nor will this defect be remedied until we in this country have learned to appreciate that proficiency in psychiatry can be obtained only in institutions in which the interest of the alienist in his profession is kept alive by abundant facilities for study and his energy is stimulated by the presence of students for whose training he is responsible. The establishment of psychiatric hospitals in close proximity to other university clinics affords the only possible solution of the fundamental problems with which we are now confronted. There is no branch of medicine in which the ounce of prevention is of greater value. Many cases which now become hopelessly chronic, if the diagnosis were made earlier in the disease, and the proper conditions for treating the patient were provided, might readily be cured."

"In order that we may be able to strike at the root of the matter we must devote our best efforts to curing all recoverable cases, and this can be done only by taking them in hand at the earliest possible moment, when the disorder is still in its incipient stage, and by giving as many physicians as possible the chance of receiving a thorough training in psychiatry, in order that cases of insanity may be recognized by the general practitioner before it is too late." "If such an institution be located at a distance from a center

of population, the commitment of cases of incipient insanity would be rendered more difficult, and not a few patients would lose the opportunity for speedy treatment, which in some cases is equivalent to missing their only chance for recovery." "Again, the easier of access the institution is to a fairly large center of population, the less will be the antipathy of patients towards a residence there, since they will feel that they are not shut up in some remote asylum away from the world and all their friends, and, moreover, they will be spared a long and tedious journey, which is distressing alike to patient and relatives. Such an institution, when situated in a city, will afford the medical profession an opportunity of becoming as intimately acquainted with its organization, its methods and its results, as is the case with the medical hospital, while at the same time, the medical staff will not be isolated, and will have every chance of keeping in touch with the advances that are being made in general medicine, of which their own is a most important branch." "Roughly speaking, institutions varying in capacity from 80 to 100 beds represent the size which best lends itself to an efficient organization."

"Physicians connected with out-patient departments every day meet with individuals suffering from incipient insanity, whom they are unable to benefit at their homes, because facilities for putting the patients to bed, isolating them and employing the other necessary procedures are lacking." "The fact that an examination of an average insane patient takes two or three times as long as when one has to deal with an ordinary sick man, means that a much larger staff of physicians can find full employment. The sole responsibility of a clinic must rest upon the medical director, who should be in absolute control of all medical matters, and who should have a continuous and not an interrupted service." "It is far better that the director should not live in the hospital. During the night and for a few hours of the day during which he is absent, his place can perfectly well be taken by the first assistant." "For the benefit of the patients, admission to these hospitals should be made as easy as possible, and there should be a minimum amount of formality and red tape."

In summarizing Paton states that: "Briefly, then, the economic advantages to a community of a psychiatric hospital with a well organized out-patient department may be summed up as follows:

"(1) A large number of patients would receive the benefit of skilled medical care at a stage of the disease at which there is great hope of either aborting or cutting short an attack of insanity."

"(2) Numerous fatalities, suicides and homicides would be prevented by the timely commitment of individuals suffering from acute attacks of insanity."

"(3) The asylums proper, in contradistinction to psychiatric hospitals, would be relieved of many of the more troublesome cases, and would therefore be much better fitted to carry out their appropriate work."

"Frequently the individual does not come under observation until the original cause has ceased to operate and a condition so complex has developed that it is impossible to determine the essential factor or factors in the etiology. A rich reward awaits the clinician who will patiently study the early symptoms of imperfect functioning of the cerebral cortex, as they appear in connection with the slight changes in functions of many of the internal organs."

In the monthly consular reports of May, 1905, of the department of Commerce and Labor at Washington, where is a report from United States Consul General Mason, of Berlin, Germany, under date of April 8, 1905, on "Modern Hospital for the Insane," giving illustrations and descriptions of the psychiatric clinic at Munich, under the medical staff of such men as Prof. Emil Kraepelin, Dr. Guapp and Dr. Alzheimer. Consul General Mason says: "The inestimable service to the community is that these wards provide for saving an indefinite but considerable percentage of the victims of incipient mental disease, and restore them to lives of usefulness, instead of leaving them to degenerate into a menace to society and a burden to the state. It provides the most consummate examination and treatment at a stage of the disease when there is the most chance of averting or arresting an attack of real insanity. It detects and takes timely charge of the smaller but important class of patients who, without the knowledge of their friends, are on the border line of insanity, and liable at any time to become suddenly dangerous to themselves or others. Public benevolence and private philanthropy can fulfill no higher or more valuable purpose than to bring the ultimate resources of science to the support of a cause like this." He also says: "Notwithstanding the rapid and deplorable increase in mental diseases which has followed the stress and strain of modern business and social life, it must be admitted that in the United States, and even in Great Britain, governmental benevolence has not progressed beyond the ecdemosynary function of providing asylums in which the more or less hopelessly incurable victims of insanity, who have become a burden and menace to their friends, can drag out in safety and physical comfort the remnants of their stricken lives. If here and there a private clinic has made a hopeful beginning with the pathological treatment of mental diseases, it has been due to individual initiative and the ministrations of such institutions are restricted mainly to patients of the well-to-do class, leaving the great majority of poor unfortunates to drift on to a stage of mental alienation, in which they become dangerous to themselves and those about them, and therefore entitled to the attention and support of the state. Germany has taken a long and important step beyond this, and to give a simple statement of the means employed and some of the results attained is the motive and purpose of the present report. There are in this country twenty-two psychiatric clinics or hospitals for the treatment of mental diseases. Most

advanced and worthy of study are those located at Kiel, Glessen, Strassburg, Berlin, and, latest and most important of all, the new clinic at Munich, which in all that relates to perfection of equipment and arrangement as well as to the scientific enlightenment of methods employed, stands undoubtedly at the head of all institutions of its class in this or any other country."

In 1751, the General Assembly of the Province of Pennsylvania adopted a law entitled "An Act to Encourage the Establishing of an Hospital for the Relief of the Sick Poor of This Province, and for the Reception and Cure of Lunatics, Collecting the Patients into One Common Provincial Hospital Properly Disposed and Appointed, where they may be comfortably subsisted, and their health taken care of at a small charge, and where by the blessing of God, on the endeavors of skillful physicians and surgeons, their diseases may be cured and removed."

Bethlem had been in existence a great many years, and St. Luke's, also in London, was opened in 1751.

To-day there are no psychiatric clinics hospitals in this country or in Great Britain such as they have in Germany, but we have an observation ward or psychiatric clinic connected with the Albany City Hospital, New York, and Scotland has one connected with its hospital in Glasgow.¹ Except those on the continent of Europe, these are the only observation wards which have been in existence long enough to furnish statistics of value. In November, 1905, I visited Albany, and had a most interesting day with Dr. J. Montgomery Mosher, who is responsible for Pavilion F, as it is called, in the Albany City Hospital. Here are received cases of insanity for observation; also cases of drug habit and delirium tremens; and also delirium patients who become delirious from the effects of poisoning from pneumonia, typhoid or other diseases, and are transferred from the other hospital wards to this pavilion. Sixty per cent are discharged as recovered or improved. Dr. Mosher showed me many interesting cases. Patients are all voluntary, there are no commitments. The police used occasionally to bring drunks in there, but now it is a most unusual occurrence. The treatment consists of flushings with water and liquids, enemas and infusions, also, for quieting, Dover's powder and calomel, castor oil and salts are given for house cleaning.

About two years before Pavilion F was opened (which was in May, 1900) Dr. Mosher was writing papers urging the care of insane in general hospitals. Among other things which he said, I quote the following: "All attempts at separate care of acute cases have been premature and have failed, because prior to the development of the large modern state hospital, its possibilities and him."

¹In a later article I shall speak of the new psychopathic ward in a building by itself but in connection with the University of Michigan under the direction of Dr. A. M. Barrett, late pathologist of our Bayview State Hospital. This is the first psychopathic hospital and clinic for the observation, care and treatment of persons afflicted with incipient insanity established in America in connection with or by any university. I expect also to later give an account of what is being done elsewhere along the lines of this paper.

tations have not been revealed. It is advisable that provision for both these classes be made in the large public hospitals. Hospitals for the insane are not always available; the natural reluctance of patients and their friends to commitment often prevents this step until the disease has reached a stage at which the chances of recovery are jeopardized. A considerable class need skilled medical observation before the advisability of removal is determined. When home care is no longer possible, the unfortunate victim, in an outburst of violence or delirium, is hurried away to jail, or some other convenient receptacle, his life in the balance, while precious time is consumed in judicial proceedings. A statement of the abuses arising from this condition of affairs would present an appalling record. An insane woman gave birth to a child in jail, her only attendant being the jailor. A physician, delirious from neglect and the decrepitude of old age, was locked in a cell. A maniacal patient who was allowed to wander about until he developed a state of great mental confusion was found in an interior unventilated cell, entirely stripped of his clothing. To meet this want, the erection of special hospitals or special pavilions in connection with the general hospitals has several times been suggested. Under the stimulus of repeated abuses that occur in the disposition of acute cases, the physicians of Albany represented to the county supervisors the need of such a building, and it received a generous response, in an appropriation of \$18,000, the administration to be in the hands of the governors of the hospital as a part of the general organization, the county's rights being protected by agreement to care for its patients at rates conforming to those for other public patients. The plans were prepared by Mr. A. W. Fuller, architect of the hospital. It is anticipated that this pavilion will furnish: 1. Transient accommodation for insane patients committed to a state institution. 2. For patients who need observation before the advisability of commitment to a state institution is determined. That it would be available (3) for mild cases of insanity, who may recover in a general hospital. 4. For victims of drug addiction; and, lastly, as an emergency resort will minister to (5) rapidly developing and critical cases of delirium; and (6) to the sudden and often dangerous forms of mental disorder which occur in the course of general diseases, or after the shock of surgical operations and anesthesia. It is in this legitimate extension of its work that the general hospital in no way conflicts with the institution for the insane, but becomes an adjunct or integral factor. As a clearing house, opportunities are offered for the discrimination and preparation of patients for the latter which should add greatly to its effectiveness."

In a series of papers on "Hospital Construction and Administration," read before the American Surgical Association, during a visit to the Albany City Hospital, June 4, 1902, J. Montgomery Mosher, M.D., in his paper on Pavilion F, says: "The small pavilion for mental and nervous dis-

orders which you have just seen is the only one of its kind in the United States, and shows, we think, a step forward in hospital administration, and in the treatment of this class of cases. This work has not been undertaken by the general hospital since the removal in 1841 of the insane patients from the Pennsylvania Hospital to its special separate department for the insane at West Philadelphia." "The greatest wrongs to persons mentally afflicted arise from the lack of understanding of the illness by the family and the practicing physician. Mismanagement and delay in removal from home are the obstacles to recovery, which our new pavilion has been built to overcome. In less than four months there have been 40 admissions." "The principle of treatment is expectancy. The plan of the pavilion is such that the uneasiness and noise of mania and delirium give no annoyance to others, and no repressive measures, either mechanical or chemical, have been necessary. The elimination of toxic products and the re-establishment of nutrition have led to natural sleep, and after the first prolonged sleep, the patient causes no further anxiety to the physician."

In the first report of Pavilion F for the year ending Feb. 28, 1903, Dr. Mosher reports the total admission of 174 cases; of these 110 recovered or improved; 49 were unimproved or died; 14 remained. He says: "The number of malcontents is not greater than in other departments of the hospital. The length of time patients should remain is still undetermined, and probably no definite rule can be established. It is well known that developed cases of mania and melancholia require for successful treatment at least three months and usually from six months to a year." "It appears that we have done more than establish an emergency hospital for temporary care. The prospect of cure has been extended to many patients whose minds have been seriously involved. The principle may be stated that any patient whose case may be regarded as curable with the means at hand should be offered the ministrations of this pavilion. The satisfactory result of the year's work is in the greatest measure due to the nurses, who have met our requirements with enthusiasm. The employment of trained women has been largely adopted in institutions for insane, but this ward is probably the first instance where women nurses have been intrusted with the entire care of all cases; the order and neatness of the men's wards, the absence of objectionable behavior, and the respect for the gentler sex, which mitigates even the greatest mental restlessness, give valuable evidence of the success of this innovation. The governor of the state, in his annual message to the legislature, notes the work of Pavilion F, and recommends the construction of institutions of this character in other cities. The local public officials have been enthusiastic in praise and co-operation, and a liberal appropriation for an enlargement has been made by the county supervisors. The average income from each patient per week has been \$8.61."

In a paper read by Dr. Mosher, on Sept. 22, 1904, at Atlantic City, on "Mental Wards in General Hospitals," he speaks of McLean Hospital at Waverley, as a branch of the Massachusetts General Hospital, and also a branch of the New York Hospital, which is run as a separate insane department under an independent executive head at a distance. He says that if the calamity which sends a patient to a hospital for help be mental in character, he might demand and he would be justified in demanding, that he be not spurned, when his neighbor with a surgical lesion, or an infectious disease has at his disposal every means known to science for the restoration of his health. For two years ending Feb. 29, 1904, 331 patients were treated of whom 110 recovered; 96 improved; 88 were unimproved; 25 died and 14 remained under treatment; 24 patients were transferred from other departments of the hospital. It is now possible to close six doors between a noisy patient and the rooms occupied by others. There is little use for interference with the activity of the patient on other grounds than his own safety. The motor restlessness characteristic of active mental disturbance may be permitted; this does away with the need of coercive measures, and the therapeutic plan from the mental standpoint may be said to be entirely conciliatory. Our strong conviction is that disregard of this architectural feature would practically destroy the efficacy of the ward; the necessity of subduing one patient to promote the comfort of his neighbor leads to resistance and resentment on his part, and harshness from his caretakers. This is an outrage on the patient and a species of malpractice which may easily bring an institution, however meritorious in other respects, into disrepute. The hospital governors further require that no patients shall be treated in this pavilion except by a physician of known and approved training in the specialty of mental diseases.

"It is not to be expected that the work of a hospital for the insane can be done in a general hospital, nor can the work of a general hospital be done in a hospital for the insane, but there are many forms of mental disorder having the character of an acute illness with disturbance of bodily function, and there are many forms of acute physical disease with disturbance of mental function, for which the general hospitals should provide; otherwise, it is not a general hospital." "It means a great deal to patients suffering from mental disorders, especially in incipient stages, and it means a great deal to the hospital."

In his report for the year ending Feb. 29, 1904, he says: "We may imagine for example, a requirement involving a delay of two or three days, or one day, or even twelve hours, for the decision of a court before a patient suffering with appendicitis or pneumonia could be placed under proper medical treatment, and yet the mental case is just as acute and critical, requires as much skill and care, and with this skill and care promises as good results as a case of appendicitis or pneumonia." "The cases for which Pavilion F

is especially adapted are, in common with other departments of the hospital, those of acute disease. Conditions of excitement, delirium or stupor arising from shock or exhaustion, with accompanying toxic states predominate. It is necessary in these cases to check the action of injurious causes; to eliminate the accumulation of waste products, and to restore nutrition and strength by rest, over-feeding and tonic measures." "Shouting, rattling of furniture and pounding on the walls or door are symptoms of active mental disorder and should only be controlled within certain bounds when endangering the patient. By adapting the building to the needs of the patient, so that isolation and retirement may be secured, a plan of treatment may be carried out solely in his interest, and not based upon the comfort of his neighbors." It is now required that all nurses spend several weeks in the mental ward before the granting of the diploma of the training school. This instruction is a part of the three years' course for nurses. The opportunity afforded in Pavilion F to groups of two or three students at a time to make examination of mental symptoms, and observe the patient during a period of several weeks, perhaps through the entire attack, have been rarely, if ever before, given to undergraduate students.

Arnold E. Smith, Esq., Odgensburg, N. Y., for several years associated with the management of the St. Lawrence State Hospital, writes to Dr. Mosher as follows: "One hundred and seventy-four mentally ill people have come voluntarily to the Albany Hospital for help, which otherwise, as a rule, excepting for your Pavilion F they would have been unable to obtain without being officially declared insane, and you have demonstrated that over 100 of the number did not deserve that mark. You are making a record that cannot be wiped out. They may appropriate your plans, adopt the methods of your administration, fail to give credit, but Pavilion F of the Albany Hospital will nevertheless stand as a pioneer of this idea."

The report of Pavilion F to Feb. 28, 1905, gives a total of the patients from the opening of the pavilion to date of 570, with a total percentage of recovered or improved at 58. Dr. Mosher says: "*Two striking indications are presented by our acute cases; first, exhaustion, and, second, a toxic state due usually to irregularities of excretion, particularly of the digestive tract.*" It has consequently been customary to promote elimination by the bowels, kidneys and skin. Not infrequently the combined amount of water, broth and milk drink has reached more than a gallon in twenty-four hours. In September 1903, saline infusion was first attempted, the patient being a young woman suffering from hysteria, complicated by acute delirium. Normal saline solution, by which is meant water containing 6-10 of 1% of common salt, has long been known to possess a certain affinity for animal tissues. By the use of a small needle permitting a slow current, so that absorption and injection are simultaneous, it has been found possible to introduce

as much as 1,700 cc. at one time, and this has been repeated twice daily. As a modification it has been found possible in certain cases to introduce the saline solution into the bowels instead of under the skin." In the report of Pavilion F for the year ending Feb. 28, 1906, Dr. Mosher lays stress on the advantage of the patients being treated in their home locality under the scrutinizing eye of their friends; also of the value of the ward in educating the people that mental disease is to be looked upon the same as any other disease and that the surroundings may be the same. He has had gratifying results from the use of rectal injections of normal salt solutions. During the year ending Feb. 28, 1906, there were 234 cases admitted of which 126 recovered or were relieved, 74 did not improve, 20 died and 14 remained.

In England, especially London, they are striving for this same thing now. They feel the need of an observation hospital much more than we do. But, as Dr. Mott and Dr. Pitt and Dr. Pye-Smith and others tell me, it is uphill work, and the superintendents of the insane hospitals naturally want the early cases for themselves and their clinics, and many of them really believe that such patients are best taken care of in wards connected with an insane institution. In England, there is also a fair amount of opposition from the strictly neurological specialists. It was this same opposition, as well as the opposition against the admittance of such patients to the general hospital, that Dr. John Carswell, of Glasgow, had to meet for nearly fifteen years before he brought about his present splendid arrangement. To-day he has a large ward connected with the City Hospital of Glasgow, the statistics of which speak for themselves, and I give them herewith.

The annual report to the Glasgow Parish Council on the Certification of Lunatics for the year ending May 15, 1904, made by Dr. John Carswell, says on page 13: "Table IV shows the number of cases treated in the observation wards during the year to have been 261, of whom 24 were afterwards removed to the asylum, 13 died and 219 were discharged recovered or relieved, leaving 5 under treatment. This is the largest number treated, and the largest number of recoveries. With the opening of the new psychiatric department at the Eastern District Hospital there will be a decided increase in the number of patients treated without recourse to the asylum."

TABLE IV.

The following table shows the number of cases treated in Observation Wards and results of treatment since 1890:

| Barony Parish. | Insane and Certified removed in O. W. to Asylum. | Died. | Discharged, recovered, or relieved. | Remain- ing. |
|-----------------------------------|--|-------|---|-----------------|
| Average of 5 years, 1890-94 | 87 | 6.6 | 4.8 | 75.6 |
| Average of 4 years, 1895-98 | 97 | 11 | 4 | 80.3 |
| *1890 | 169 | 24 | 14 | 124 |
| 1900 | 248 | 39 | 19 | 182 |
| 1901 | 212 | 28 | 10 | 167 |
| 1902 | 213 | 32 | 22 | 147 |
| 1903 | 242 | 36 | 8 | 193 |
| 1904 | 261 | 24 | 13 | 219 |

*Amalgamation took place in middle of this year.

In the report of the Glasgow Parish for the year ending May 15, 1905, Dr. Carswell gives the following statistics:

| Certified Insane and Asylums | Removed direct to Asylum | M. | F. | Total. | M. | F. | Total. |
|---|---|-----|-----|--------|-----|-----|--------|
| | 250 | 199 | 449 | | | | |
| | Removed to Mental Hospital and afterwards certified insane and removed to Asylum, | 69 | 65 | 134 | | | |
| Total certified and removed to Asylum, | | | | | 319 | 264 | 583 |
| Treated in Hospital. | | | | | | | |
| Not certified | Discharged recovered, | 125 | 88 | 213 | | | |
| Insane | Discharged relieved, Died, | 60 | 35 | 95 | | | |
| | | 18 | 12 | 30 | | | |
| | | 203 | 135 | 338 | | | |
| Otherwise disposed of, i. e., not certifiable; treated at home, applications withdrawn, etc., | | 47 | 29 | 76 | | | |
| Remaining in Hospital May 15, | | | | | 250 | 164 | 414 |
| | | | | | 14 | 16 | 30 |
| Total applications, | | | | | 583 | 444 | 1027 |

MENTAL HOSPITAL.†

Glasgow Parish: Year ending 15th May, 1905. Statement showing Admissions and Discharges.

| Admitted. | M. | F. | Total. | M. | F. | Total. |
|-------------------------------|----|----|--------|----|----|--------|
| Delirium Tremens, | 81 | 27 | 108 | | | |
| Delirium (Non-alcoholic), | 17 | 5 | 22 | | | |
| Excitement, | 33 | 45 | 78 | | | |
| Depression, | 47 | 42 | 89 | | | |
| Mental confusion, | 43 | 38 | 81 | | | |
| Mental confusion (puerperal), | | 8 | 8 | | | |
| Stupor, | 10 | 4 | 14 | | | |
| Hysteria, | 1 | 8 | 9 | | | |
| Epilepsy, | 10 | 11 | 21 | | | |
| Cerebral disease, | 4 | 2 | 6 | | | |
| General paralysis, | 11 | 6 | 17 | | | |
| Dementia, | 5 | 9 | 14 | | | |
| Delusional states, | 18 | 9 | 27 | | | |
| Various, | | | | | | |

Total cases admitted, 286 216 502

| Discharges. | M. | F. | Total. | M. | F. | Total. |
|-------------|-----|-----|--------|----|----|--------|
| Recovered, | 125 | 88 | 213 | | | |
| Relieved, | 60 | 35 | 95 | | | |
| Died, | 18 | 12 | 30 | | | |
| | 203 | 135 | 338 | | | |

Certified insane and removed to Asylums, 69 65 134 272 200 472

Remaining May 15, 14 16 31

| Re-admissions during the year, | M. | F. | Total. |
|---|-----|-----|--------|
| No. of persons admitted, | 27 | 21 | 48 |
| No. of persons recovered and relieved, | 259 | 195 | 454 |
| Being 38.3% recovered and relieved of persons admitted. | | | |

Average Period of Residence in Hospital.

| | |
|------------------|------------|
| Cases recovered, | 21.0 days. |
| Cases relieved, | 26.6 days. |
| Died, | 16.0 days. |

† This is the only hospital of the kind in Great Britain, but the Commissioners of Insanity of Scotland are loud in its praise, and are urging the duplication of such wards in the different cities.

‡ Being 61.4% of cases admitted.

I hope that the physicians who read this article will seriously consider the need we have for a psychopathic hospital or wards in Boston. As we cannot now be the first to establish such a hospital let Boston at least be among the first in this as she has been in so many advances for relief of humanity.

GRAND JURY ADVOCATES HYGIENIC RULES. — The Philadelphia Grand Jury has recommended that consumptive prisoners be isolated; and that street cleaning and flushing and ash collecting be done at night, because the consequent dust is injurious to the health, — two most excellent recommendations. — *New York Medical Journal*.

A CASE OF MULTIPLE ULCERS OF THE GALL BLADDER.

BY EDWIN A. LOCKE, A.M., M.D., BOSTON.

Assistant in Clinical Medicine, Harvard Medical School; Assistant Visiting Physician, Long Island Hospital; Physician to Out-Patients, Boston City Hospital.

AND

R. B. WOLBRACH, M.D., BOSTON.

*Instructor in Pathology, Harvard Medical School; Pathologist to Long Island Hospital.**From the service of Dr. James J. Minot, Long Island Hospital.*

Summary.—Woman of fifty-six with varicose ulcers of the leg; sudden onset of severe abdominal symptoms suggesting appendicitis; operation and

slight nausea and she vomited once. The bowels had not moved for three days. On examination the abdomen was found to be moderately distended and the muscles held somewhat rigidly. There was moderate general tenderness to pressure, but distinctly more marked in the mid-epigastric region and the right iliac fossa. There was no tumor to be felt and no ascites.

Liver, normal size and gall bladder not made out.

Rectal examination revealed no mass, but high up, more on the right, tenderness was evident. Temperature, 101° ; pulse, 120; respiration, 28. White count, 22,400 per c.mm. Otherwise the physical examination was as at entrance.

At the termination of the patient seemed critical and after consultation with Dr. J. H. Cunningham, an operation was performed. Probable diagnosis: Acute appendicitis. Operation by Dr. J. H. Cunningham, 12.15 P.M., Jan. 30, 1906. Ether narcosis. No abdominal mass. Muscle splitting incision one inch above umbilicus. Bowel normal in color, but everywhere edematous. The lower half of the cecum was opened, but the appendix appeared normal. Cecum removed and the stump invaginated by two sutures of linen thread. The gall bladder was seen because of the intestinal distention, but it was not enlarged. The surface was smooth and it emptied readily with pressure. The surface was smooth. The pelvic organs were normal. The mesenteric nodes were not enlarged. The peritoneum was closed by a continuous chromic.

The muscle and fascia were approximated in the usual manner, and the skin closed by a subcutaneous gut suture. A dry sterile dressing was applied. Duration of operation, eighteen minutes. The patient received 1-30 of strychnine during the operation.

There was no marked shock immediately following the operation, and the patient recovered promptly.

For several days, subsequently, however, the patient had persistent vomiting which finally approached retching, and a moderate watery, offensive, bloody diarrhea. Twenty-four hours after the operation the stools contained a considerable amount of blood and pus. In spite of these symptoms the patient's condition seemed improved, the temperature at the end of the second day to 99° . Leucocytes, 10,000 per c.mm.

Vomiting ceased, but diarrhea still persisted, and the dejections contained more blood and pus.

About an ounce of blood passed this morning, vomited once to-day. Patient in weak condition, looks septic.

Temperature elevated (100°). Wound reddened and marked tenderness in surface. Wound opened and several ounces of foul pus evacuated. Deep sinus passing right iliac fossa. This sinus was thoroughly irrigated (believed to be fecal fistula). Pus, cloudy, acid; specific gravity, 1.042. Bile, absent; albumin, a trace; sediment, none.

On Jan. 31, blood corpuscles, many pus, round and oval cells, fairly numerous hyaline and fine and coarse granular casts, some with fat drops adherent.

Jan. 31. Patient gradually sinking. Wound irrigated and dressed daily. Discharge still fecal in character. Subpectoral infusions of saline solution, nutrient emulsion.

Feb. 3. Patient complains of dyspnea and pain in left chest with cough or deep inspiration. Temperature, 102.8° ; pulse, 130; respiration, 30. Examination of chest showed dullness at left apex to spine of scapula behind, and to third rib in front. Over this area the

GALL BLADDER—LOCKE



Half of the gall bladder, seen about two-thirds normal size.

Diagnosis: Arteriosclerosis, myocarditis, chronic bronchitis, emphysema and varicose ulcers.

Jan. 15, 1906. About midnight the patient complained of abdominal cramps and soon after vomited with considerable relief. She slept fairly well until morning, but the pain then returned and was described as of a dull character, occasionally paroxysmal. It was felt all over the abdomen, but with greatest intensity in the epigastrium. A few hours later she stated that the pain had become definitely localized just below, and to the right, of the navel. There was

as much as 1,700 cc. at one time, and this has been repeated twice daily. As a modification it has been found possible in certain cases to introduce the saline solution into the bowels instead of under the skin." In the report of Pavilion F for the year ending Feb. 28, 1906, Dr. Mosher lays stress on the advantage of the patients being treated in their home locality under the scrutinizing eye of their friends; also of the value of the ward in educating the people that mental disease is to be looked upon the same as any other disease and that the surroundings may be the same. He has had gratifying results from the us injections of normal salt solutions. I year ending Feb. 28, 1906, there were admitted of which 126 recovered or were 74 did not improve, 20 died and 14 re-

In England, especially London, they ing for this same thing now. They feel of an observation hospital much more do. But, as Dr. Mott and Dr. Pitt Pye-Smith and others tell me, it is up and the superintendents of the insane naturally want the early cases for their clinics, and many of them realize that such patients are best taken care of connected with an insane institution. land, there is also a fair amount of from the strictly neurological specialist this same opposition, as well as the against the admittance of such patients general hospital, that Dr. John Carswell, had to meet for nearly fifteen years brought about his present splendid arrangement. To-day he has a large ward connected City Hospital of Glasgow, the statisticians speak for themselves, and I give them

The annual report to the Glasgow Parish on the Certification of Lunatics for ending May 15, 1904, made by Dr. John says on page 13: "Table IV shows the of cases treated in the observation ward the year to have been 261, of whom 24 were removed to the asylum, 13 died were discharged recovered or relieved 5 under treatment. This is the largest treated, and the largest number of With the opening of the new psychiatric at the Eastern District Hospital be a decided increase in the number treated without recourse to the asylum

In the report of the Glasgow Parish for the year ending May 15, 1905, Dr. Carswell gives the following statistics:

Statement showing how the applications made to the Inspector of Poor (Clerk to the Lunacy District) for the removal of persons supposed to be of unsound mind were disposed of, after medical examination:

| | | M. F. Total. M. F. Total. | |
|-------------------------------|--|---------------------------|-----|
| Certified | Removed direct to Asylum, 250 | 199 | 449 |
| Insane and removed to Asylums | Treated in Mental Hospital and afterwards certified insane and removed to Asylum | 60 | 65 |
| | | 259 | 514 |

TABLE IV.

The following table shows the number of cases treated in the observation ward and results of treatment since 1890:

| Barony Parish: | Year-ended Treated May 14. | Certified Insane and removed in O. W. to Asylum. | Discharged, recovered, or relieved. | Remaining. |
|-----------------------------|----------------------------|--|-------------------------------------|------------|
| Average of 5 years, 1890-94 | 87 | 6.6 | 4.8 | 75.6 |
| Average of 4 years, 1895-98 | 97 | 11 | 4 | 80.3 |
| *1899 | 169 | 24 | 14 | 124 |
| 1900 | 248 | 39 | 19 | 182 |
| 1901 | 212 | 28 | 10 | 167 |
| 1902 | 213 | 32 | 22 | 147 |
| 1903 | 242 | 36 | 8 | 193 |
| 1904 | 261 | 24 | 13 | 219 |

*Amalgamation took place in middle of this year.

in this as she has been in so many advances for relief of humanity.

GRAND JURY ADVOCATES HYGIENIC RULES. — The Philadelphia Grand Jury has recommended that consumptive prisoners be isolated; and that street cleaning and flushing and ash collecting be done at night, because the consequent dust is injurious to the health, — two most excellent recommendations. — *New York Medical Journal*.

A CASE OF MULTIPLE ULCERS OF THE GALL BLADDER.

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Instructor in Pathology, Harvard Medical School, Pathologist to Long Island Hospital.

From the service of Dr. James J. Minot, Long Island Hospital.

Summary—Woman of fifty-six with varicose ulcers of the leg; sudden onset of severe abdominal symptoms suggesting appendicitis; operation and nothing abnormal found; local abscess with peritonitis following; terminal lobar pneumonia; death twenty-three days after operation; autopsy; entire gall bladder lined with chronic ulcers, two of which had apparently perforated, causing a general peritonitis.

J. B., a cook, aged fifty-six, entered the Long Island Hospital, Dec. 11, 1905.

Family history, not important.

Past history: General health excellent. Never any serious illness. She has been in the habit of taking nine or ten cups of tea daily, but never any alcohol. Menopause at fifty.

Present illness: The patient came to the hospital because of painful ulcerations on the anterior part of the right lower leg, of six months' duration. For several weeks a troublesome dry cough which is worse at night; pain in chest with deep inspiration or cough; night sweats of moderate severity. No cardiac, gastric or renal symptoms. Appetite poor; bowels constipated.

Physical examination: Well developed and healthy appearing woman with some evidence of senility. Pupillary reactions and ocular movements normal; areus senilis. Tongue coated, teeth decayed and many missing. No enlargement of the lymph nodes.

Over the whole of both lungs, the expiration is prolonged and low pitched and the percussion note hyper-resonant; numerous medium râles at both bases posteriorly, especially on the right where the resonance is somewhat diminished.

Heart: Slight enlargement to left 10 cm. from midsternum in the fifth space; sounds short and valvular; moderate irregularity in force and rhythm. At the apex and transmitted to the axilla, is a very soft, blowing, systolic murmur. Aortic second sound accentuated. Pulses synchronous, low tension, arteries slightly tortuous and palpable.

Abdomen: Nothing abnormal made out. Liver, dullness to costal border; edge not felt.

Extremities: Patellar and plantar reflexes normal, no clonus. Over the anterior surface of lower right leg there are three small, shallow ulcers, the largest 3 x 7 cm. in diameter. The floors are covered by unhealthy granulations and necrotic tissue and each is surrounded by marked infiltration with redness. The veins of the lower leg are dilated and tortuous.

Diagnosis: *Arteriosclerosis, myocarditis, chronic bronchitis, emphysema and extensive ulcers.*

Jan. 15, 1906. About midnight the patient complained of abdominal cramps and soon after vomited with considerable relief. She slept fairly well until morning, but the pain then returned and was described as of a dull character, occasionally paroxysmal. It was felt all over the abdomen, but with greatest intensity in the epigastrium. A few hours later she stated that the pain had become definitely localized just below, and to the right, of the navel. There was

slight nausea and she vomited once. The bowels had not moved for three days. On examination the abdomen was found to be moderately distended and the muscles held somewhat rigidly. There was moderate general tenderness to pressure, but distinctly more marked in the mid-epigastric region and the right iliac fossa. There was no tumor to be felt and no ascites.

Liver, normal size and gall bladder not made out.

Rectal examination revealed no mass, but high up, more on the right, tenderness was evident. Temperature, 101 $\frac{1}{2}$; pulse, 120; respiration, 28. White count, 22,000 per c.mm. Otherwise the physical examination was as at entrance.

The condition of the patient seemed critical and after consultation with Dr. J. H. Cunningham, an operation was advised. Probable diagnosis: Acute appendicitis.

Operation by Dr. J. H. Cunningham, 12:15 p.m., Jan. 15, 1906. Ether narcosis. No abdominal mass palpable. Muscle splitting incision one inch above McBurney's point. Bowel normal in color, but everywhere distended. The lower half of the cecum was slightly injected, but the appendix appeared normal. Appendix removed and the stump invaginated by two purse-string sutures of linen thread. The gall bladder could not be seen because of the intestinal distention, but by palpation it was not enlarged. The surface seemed smooth and it emptied readily with pressure. The liver surface was smooth. The pelvic organs normal. The mesenteric nodes were not enlarged. The peritoneum was closed by a continuous chromic-gut suture. The muscle and fascia were approximated in a similar manner, and the skin closed by a subcutaneous silk-worm gut suture. A dry sterile dressing and swathe applied. Duration of operation, eighteen minutes. The patient received 1-30 of strychnine during the operation.

There was no marked shock immediately following the operation, and the patient recovered promptly from ether. For several days, subsequently, however, there was persistent vomiting which finally approached a fecal character, and a moderate watery, offensive and, at times, bloody diarrhea. Twenty-four hours after operation the stools contained a considerable amount of blood and pus. In spite of these symptoms the patient's condition seemed improved, the temperature falling at the end of the second day to 99°. Leucocytes, 10,000 per c.mm.

Jan. 18. Vomiting ceased, but diarrhea still persists. This morning the dejections contained more blood and a large amount of pus.

Jan. 19. About an ounce of blood passed this morning. Vomited once to-day. Patient in weak condition and looks septic.

Jan. 25. Temperature elevated (100°). Wound somewhat reddened and marked tenderness in surrounding area. Wound opened and several ounces of brownish, foul pus evacuated. Deep sinus passing down into right iliac fossa. This sinus was thoroughly irrigated and wicked (believed to be fecal fistula). Urine: Pale, cloudy, acid, specific gravity, 1.012; sugar and bile, absent; albumin, a trace; sediment, few normal blood corpuscles, many pus, renal and bladder cells, fairly numerous hyaline and free and coarse granular casts, some with fat drops adherent.

Jan. 31. Patient gradually sinking. Wound irrigated and dressed daily. Discharge still fecal in character. Subperitoneal effusions of saline solution, nutrient and water.

Feb. 3. Patient complains of dyspnea and pain in left chest with cough and deep respiration. Temperature, 102.8; pulse, 140; respiration, 30. Examination of chest showed dullness at left apex to spine of scapula behind, and to third rib in front. Over the area the

respiration is somewhat bronchial in character, vocal fremitus increased; no râles.

Feb. 5. Definite and marked signs of consolidation at left apex and over remainder of both lungs many coarse, moist râles. Condition of patient very critical. Abdominal wound still discharging. Vomiting continues.

Feb. 7. The patient failed rapidly and finally died at 2.10 p.m.

Autopsy No. 06:15. Regular No. 22,230. Feb. 8, 1906. Dr. S. B. Wolbach. Autopsy, 42 hours post mortem.

ANATOMICAL DIAGNOSIS.

Lobar pneumonia.

General arteriosclerosis.

Fibrinous pericarditis.

Fibrinous peritonitis.

Abscess of abdominal wall.

Operation wound.

Absence of appendix.

Ulcerative cholecystitis.

Cysts of choroid plexus.

Granular ependymitis.

Body: Of a fairly well-developed and nourished white woman, 166 cm. long. Pupils equal, 5 mm. Rigor mortis present. Slight lividity of dependent parts. Both lower legs are pigmented, brown, over lower halves. The right lower leg is bluish red over the lower portion of the tibia.

On the right side of the abdomen, on a level with the anterior superior spine of the ileum, is a gaping operation wound, 3.5 cm. long, 1.5 cm. wide, running vertically, with dry glazed walls. The wound is 6 cm. internal to the anterior superior spine, and 9 cm. external to the median line. The floor is dirty gray and granular. Exploration reveals a recess running upwards and backwards for 10 cm. and several centimeters in width.

Peritoneal cavity: The intestines are everywhere glued together by fibrin. Several loops are similarly adherent to the pelvic walls. The sigmoid flexure is injected and adherent by fibrinous material behind the uterus. To the peritoneum below the operation wound there are adherent by fibrous tissue the ascending colon, the transverse colon and the omentum. The transverse colon is pulled downwards making a sharp bend to reach the site of operation; it overlies the ascending colon. The omentum is adherent to the abdominal wall, to the bend of the transverse colon, to the ascending colon below this and to the inferior ileocecal angle. On separating the transverse colon from its adhesions, about 5 cc. of thick, yellowish, puriform material is released from a cavity between the portions of large intestine and omentum. On cutting the adhesions between the cecum, ascending colon and abdominal wall, the anterior wall of the ascending colon is found to have formed the floor of the cavity seen through the operation wound. The cavity extends upwards and outwards between the abdominal muscles and the transversalis fascia. Below the ilium at its union with the cecum is a small cavity containing about 3 cc. of thick, yellowish, puriform material, which escapes on removing the adherent omentum. Removal of the adhesions also tears the wall of the cecum leaving a round aperture 0.4 cm. in diameter, the probable site of the appendix. The hepatic flexure of the colon is adherent to the pylorus and first portion of the duodenum. The mesenteric lymph nodes are not palpable. The vessels of the intestinal surfaces are injected over large areas of intestine. The retro-peritoneal glands are enlarged; soft, pinkish gray on section.

Pleural cavities: The left lung is loosely adherent over all surfaces by a layer of yellow fibrinous material, 1 to 2 mm. in thickness. The apex is adherent by fibrous tissue. The right lung is adherent at apex and along posterior border of upper lobe by firm fibrous adhesions.

Pericardial cavity: Contains about 30 cc. of slightly clouded liquid and a few fibrinous flakes upon the auricles.

Heart: Weight, 320 gms. Myocardium is dark red, firm. Aortic and mitral valves have irregular, yellow, thickened patches, otherwise valves and endocardium are normal. Coronary arteries show extensive patches of yellow thickening. No calcification. Measurements: Pulmonary valve, 7.5; tricuspid valve, 11; Aortic valve, 7; mitral valve, 9; thickness of left ventricle, 2; right ventricle, 0.5 cm.

Lungs: The whole upper lobe of the left lung is solid, completely filling upper part of chest cavity. On section it is granular, gray with areas of red and yellow, the whole bathed in thin puriform material. Bronchi yield pus. The apex is puckered by thickenings of the pleura. No evidence of tuberculosis on section. The lower lobe is bluish red, boggy and on section, is wet, dark red, yields much bloody liquid and air on pressure. Bronchi yield pus. Right lung: Partially collapsed. All lobes are heavy, boggy and bluish red in color. On section all are wet, dark red, yielding much blood and frothy liquid on pressure. Bronchi contain pus.

Spleen: Weight, 65 gm. Is small, salmon red in color. Capsule smooth. Consistency is loose, elastic; on section is red. Trabeculae are prominent. Malpighian bodies visible.

Liver: Weight, 1,400 gm. Surface is smooth, color pale, brownish red. On section is mottled pale, brownish red and gray. Consistency normal. Nothing abnormal found on close sectioning. The gall bladder is moderately distended, is 7 cm. long, 5 cm. in diameter, ovoid in shape. On separating the adherent colon, two small circular apertures with thin, regular pigmented edges are left on the fundus of the gall bladder. The gall bladder contains thick, viscous, stringy, grayish green fluid with numerous soft black masses of pigment. The inner surface has many (over 30) deep circular undermined ulcerations from 1 to 8 mm. in diameter. They are most abundant on the wall attached to the liver, where a group of nine large ones are separated only by interlacing columns of tissue. Many are surrounded by a dark zone, several millimeters wide, which on section is seen to be due to lateral extension and pigmentation beneath the mucous membrane. The cystic duct is tortuous, of small caliber but patent upon careful dissection. The hepatic and common ducts and the duct of Wirsung are normal.

Pancreas: Normal.

Gastro-intestinal tract: Normal.

Kidneys: Weight, 390 gm. Are large, pale. Cortex measures 0.5 to 0.7 cm. Glomeruli visible as colorless points. Pyramids injected. Capsule strips easily from a smooth surface.

Genitalia: Normal.

Aorta: Markedly sclerosed and calcified.

Head: Hair scanty, gray, moderately long. Scalp and calvarium are normal. Dura and sinuses are normal.

Brain: Weight, 1,180 gm. Pia is moist, vessels injected. Cortex, basal ganglia, pons, medulla and cerebellum are negative. Apendymal floor of both ventricles over tenia semicircularis in anterior horn shows fine translucent granulations. Both choroid plexi contain a few cysts 1 to 4 mm. in diameter.

Middle ears are normal. Vessels at base show slight sclerosis.

MICROSCOPICAL EXAMINATION.

Heart: Negative.

Lung: The alveoli are filled with an exudate in general of a purulent type, but in large groups of alveoli composed mainly of fibrin. A few alveoli contain chiefly mono-nuclear phagocytic cells and granular detritus with few polynuclear leucocytes. The bronchi contain pus.

Spleen: Injected. The follicles are of good size and numerous and contain many plasma cells with an occasional mitotic lymphocyte. The sinuses of the pulp are distended with blood, the lining cells show a small amount of light brown pigment. Arteries present marked hyaline change.

Liver: Moderately injected. Peripheral cells of lobules show marked vacuolation due to fat. The central cells contain a small amount of dark brown pigment.

Pancreas: Negative. Marked hyaline changes in the arteries.

Kidneys: There are a few small foci of connective tissue increase inclosing a few atrophied tubules and an occasional sclerosed glomerulus. The capsular spaces of the glomeruli inclose considerable granular exudate. The epithelium of the tubules is pale, granular, swollen, the lumina contain circular reticulum and granular detritus. Many hyaline casts seen in the collecting and Henle tubules. The arteries show slight endarteritis.

Adrenal: Negative.

Appendix stump: The wall of the cecum is markedly infiltrated with lymphoid and plasma cells. The surface is covered with fibrin, necrotic material and leucocytes.

Gall bladder: There are in several places on the inner surface attached remnants of necrotic mucous membrane. The wall is infiltrated with lymphoid cells, plasma cells and eosinophiles. The ulcers are deep and have widely undermined edges with marked destruction of tissue. The floors of the ulcers are very thin and consist of separated strands of connective and smooth muscle tissue infiltrated with lymphoid and plasma cells and eosinophiles. The peritoneal surfaces are covered with fibrin. In the overhanging edges and in the tissue surrounding the cavity of the ulcers are many polynuclear leucocytes. The predominating cells are the lymphoid, plasma, eosinophilic and large mononuclear phagocytic cells. There are many small bacilli in the walls of the ulcers, free and within polynuclear leucocytes.

Cerebral cortex: Negative.

Floor of lateral ventricles: There is an increase of neuroglia tissue with many corpora-amylacea beneath the ependyma.

REMARKS

The above case of ulcerative cholecystitis not occurring in association with gallstones and leading through perforation to an infection of the peritoneum and finally to death is almost unique in the literature. Courvoisier¹ found 74.5% of his series of 51 cases of suppurative cholecystitis to be secondary to gallstones. In our case the history gives no suggestion of any antecedent cholelithiasis, neither were calculi found at the operation or post-mortem section, hence the evidence seems complete that the

inflammation of the gall bladder occurred independent of this condition. Orth² speaks of extensive ulceration and perforation of the gall bladder as occasionally combined with purulent cholecystitis, especially when the latter is secondary to gallstone, typhoid fever, dysentery, cholera or pyemia.

Moore³ reports a case of a man of sixty-seven, who, while confined to his bed by an attack of acute bronchitis, was seized with severe symptoms of general peritonitis. At operation the peritoneal cavity was found infected and contained a considerable amount of pus and bile. The gall bladder was distended, elongated, thickened and contained a considerable amount of fine gravel, but no calculi. All over the inner surface were many minute, shallow ulcers containing pus and mucus. These were most abundant at the fundus where two had apparently perforated causing the peritonitis. No obstruction to the common duct existed.

Chiari⁴ records a case of cholecystitis in a boy of twelve years, occurring during the course of typhoid fever. At autopsy the entire inner surface of the gall bladder showed an intense phlegmonous inflammation with extensive ulceration and resulting peritonitis. These lesions in several places closely resembled the typhoid ulcers in the small intestines and from the purulent contents of the gall bladder a pure culture of the typhoid bacillus was obtained.

In the above case we could find no indications as to the etiology. The question naturally arises if the local infection of the gall bladder might not have been caused by an infection following the operation, but the character of the changes in the tissues is unquestionably of a more chronic character than would have been possible in such a case. Furthermore, the clinical evidence is important. The symptoms are so well explained by cholecystitis that in the absence of any condition found at operation or autopsy to account for them, the existence of the ulcerations previous to the laparotomy cannot be doubted. The sudden onset of the severe symptoms in an obviously chronic ulcerative condition we are unable to explain. Certainly they were not due to perforation as at the operation twelve hours after there was no evidence of peritonitis either local or general. Two possible explanations present themselves for the peritonitis following operation. First, the local sepsis at the wound may well have been the point of origin though a much more definite one is through the perforations in the gall bladder which were found at necropsy. Perforation probably occurred spontaneously, although it is evident from the extremely thin floor of many of ulcers found at autopsy, that the emptying of the gall bladder by pressure at the operation might have caused them to give way, thus permitting the infectious material to escape into the peritoneal cavity. If the contents were not forced through these perforations into the peritoneal

¹ Casuistisch-statistische Beiträge a. Pathologie u. Chirurgie d. Gallenwege, Leipzig, 1890.

² Lehrb. der speziellen Pathologischen Anatomie, 1887, Vol. I, p. 985.

³ Trans. Path. Soc. London, 1890, 91, abo. p. 178.

⁴ Prager Med. Wochen., 1893, xxviii, p. 261.

cavity, but into the duodenum, as was supposed, this may have been the source of the pus observed in the dejections after operation. No lesions of the gastro-intestinal tract were found at the post-mortem section to indicate a possible origin of the malena.

New Instrument.

APPARATUS FOR LOCAL APPLICATION OF DRY COLD AND HEAT.

BY ADDISON W. HAIRD, M.D., NEW YORK.

HEAT and cold by local application are remedial measures possessed of great power for good in properly selected cases; either of them may be applied for superficial and limited, or for deep-seated and more distant, affections. Cold or heat causes relief of pain in inflammation by producing contraction of local blood-vessel walls; and, as a result, inflammatory exudates do not occur, congestion is relieved, and as pressure on nerve filaments ceases, the pulsating pain passes away. Cold in particular diminishes engorgement in swollen and reddened tissues, and benumbs the nerve endings, so that relief from pain is often immediate and enduring.

Cold has been used with no small degree of success in many of the deeper inflammations, notably in the treatment of pneumonia and

is dependent on the sensations of the patient, who generally can tell which affords him the greater comfort. Heat, however, is usually most grateful and efficacious in painful conditions of the nerves, and more soothing in those disorders accompanied by disturbance in the peripheral nerves. Happy results are frequently obtained in certain gynecological cases; indeed, local heat and cold find a field of great utility in the vesical, vaginal and rectal region.

There has been designed an apparatus called the *currodon*, which has a capacity of three quarts, and is so arranged that a continuous flow of its contents may be produced. Due to its syphonic action, the machine is practically automatic, and may be placed either above or below the level of the patient. Filled with ice and water, or full of hot water and having a small lamp beneath, the *currodon* will furnish a steady flow through coil, bulb, or hollow applicator, at an equable temperature, the flow being maintained by simply drawing up the handle every half hour. The apparatus is furnished with a carefully graduated thermometer, which projects through the dome. The *currodon* is adapted for use in office, hospital, or home, and produces beneficent and gratifying results in the treatment of many conditions.

Clinical Department.

A CASE OF DOUBLE UVULA IN A CHILD.

BY W. P. COUER, M.D., BOSTON.

ANNIE S., seven years, was seen Feb. 12, 1906. The case was brought to my attention on account of the child's thick speech. The child was of Russian parentage and the abnormality had been noticed since birth.

Examination showed a fairly well developed and nourished child. There was slight internal strabismus, the nose was flat and broad; and the two lower lateral incisor teeth were crowded together on each side. There was marked pigeon breast; there was no rosary or enlargement of the epiphyses.

Examination of the heart, lungs and abdomen was negative.

Examination of the throat showed a somewhat reddened pharynx as well as tonsils, the submaxillary glands were enlarged.

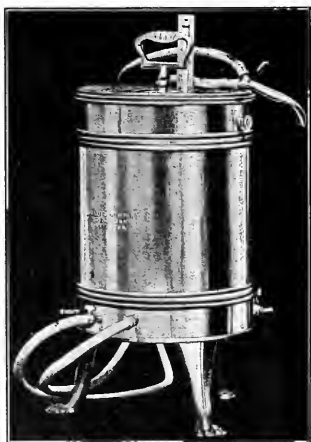
There were two distinct uvulae arising from either side of the soft palate just beyond the pillars of the fauces. The uvulae were perfectly formed of normal size for the age and hung directly downward in a straight line just back and to the side of the tonsils.

According to McKenzie¹ this is one of the rarest of embryological curiosities. He has met with the condition in several forms, however, and this case belongs to the second variety in his classification.

McKenzie classifies these abnormalities of the uvula into five groups:

No. 1. Two separate distinct uvulae hanging on either side of median line of soft palate.

No. 2. (The reported case belongs to this group.) No central uvula, one on each side



pleurisy. In pericarditis and endocarditis cold relieves palpitation and distress, and quiets the heart. In acute and chronic prostatitis the abstraction of heat by the local application of a suitable hollow prostatic instrument introduced into the rectum may be both palliative, and curative to some extent.

In like manner heat is used locally for a number of purposes; and in the treatment of many forms of acute inflammation, the choice of heat or cold

projecting from the soft palate at the junction of the anterior and posterior faucial pillars.

No. 3, in which there is a well-formed lateral and externally deflected uvula, its fellow on the other side being rudimentary.

Nos. 4 and 5 represent a transition from bifid to double uvula. 4, two central uvulae, joined at the insertion into the palate; and 5, the central uvulae joined into their insertion into a sort of hemispherical bulging downward of the central portion of the soft palate.



Double uvula in a child

The first variety of the classification is the rarest.

Coleman² says entire absence of the uvula is of much more common occurrence than a double one; he reports a case of double uvula, the rarest type, in a boy.

H. Foster³ reports a case of two distinct uvulae, side by side, separated all the way to the Arch O twenty-three years. This is the same type as the case reported.

R. W. Shufeldt⁴ reported a case, O 23, of latid uvula.

Some⁵ reports a case in a boy, bifid uvula with degeneracy, and states that Berens in examining 3,000 cases found the uvula abnormal 84 times; 14 were deeply cleft.

It is of interest in connection with my case that examination of the mother showed a normal uvula, also the youngest child, but the second child, age five, had an abnormally short uvula, not more than half the normal length.

The father was not examined but the mother states that she is very certain that he had no such abnormality.

Medical Progress.

PROGRESS IN GASTRO-INTESTINAL DISEASES.

BY ELLIOTT P. JOHNS, M.D.

(Continued from No. 24, p. 682.)

HYPERSECRETION OF MUCUS IN THE STOMACH.

KUTTNER⁷⁰ understands by this name a hypersecretion of gastric mucus in the empty stomach. He considers the presence of more than 25 cc. mucus to be, as a rule, pathological. Such cases are not very rare. To deserve this designation the mucus should be constantly present, or at recurrent intervals. The reaction of the mucus is neutral, alkaline or weakly acid. Hydrochloric acid, however, is absent in the typical cases. Mixed forms occur with those of hypersecretion of gastric juice, and in these hydrochloric acid may be present. There are two forms of the hypersecretion of mucus,—intermittent and chronic. The intermittent begins with headache, anorexia, nausea, or with sudden vomiting, beginning early in the morning and almost uncontrollable. These attacks last sometimes only a day, and suggest the gastric crises in locomotor ataxia, but they occasionally last from three to twelve days, and greatly weaken the patient. They often suddenly end. In the beginning one can at times break up the attack by gastric lavage. On other occasions even injections of morphine fail. In two cases the hypersecretion of mucus was accompanied by nasal hypersecretion. The chronic form of hypersecretion of mucus often presents no suggestive symptoms, but is most frequently found in chronic catarrh and in nervous diseases of the stomach, in the same way as the intermittent form chiefly occurs in nervous and easily excitable persons. Nervous influences play a corresponding rôle in hypersecretion of mucus as in the secretion of hydrochloric acid, and treatment must bear this fact in mind. Gastric lavage with plain water or mineral water together with the complete withdrawal of food and drink during the severe attacks are suggested for treatment.

GASTRO-ENTEROSTOMY AND PYLOROPLASTY.

Cannon and Blake⁷¹ sum up their work on gastro-enterostomy and pyloroplasty in the following conclusions:

The stomach is not a passive bag. During digestion the cardia and slowly contracts, pressing its contents into the pyloric end. Over the pyloric end during digestion peristaltic waves are continually running, churning the food with the gastric juices and forcing the chyme into the intestine. Observations on the functioning human stomach show that as it empties it shortens, especially along the greater curvature. Therefore, the part of the stomach lowest when the organ is full or relaxed is not lowest as it empties. The pylorus then becomes the lowest point.

REFERENCES.

- ¹ McKenna, J. N. Johns Hopkins Hospital Reports, 1890, p. 32.
- ² Coleman, A. H. Laryngoscope, 1897, 7, 4, 30.
- ³ Foster, H. Med. Record, 1895, vol. xix, p. 15.
- ⁴ Shufeldt, R. W. N. Y. Med. Jour., 1885, vol. xli, p. 923.
- ⁵ Some, Louis S. Ibid., 1896, p. 63.

⁷⁰ Cited in Centralbl. f. inn. Med., 1906, No. 9, p. 720.

⁷¹ Annals of Surgery, 1905, May.

Even if "gravity drainage" occurred, the pylorus is the natural outlet so long as the stomach retains its power of contracting.

The pressure within the abdomen is approximately atmospheric pressure. The pressure in any part of the passive alimentary canal depends on the weight of the overlying abdominal organs. If the canal is inactive, the food therefore is as if surrounded by water. Gravity cannot act, and gravity drainage does not occur.

After an ordinary meal, the peristalsis of the pyloric end of the stomach makes the contents of this part more fluid than the contents of the cardiac end. Because peristaltic waves move towards the pylorus, the intragastric pressure is three or four times greater at the pylorus than in the cardiac end. Observations on large cats with gastro-enterostomy openings of various sizes at various parts of the stomach showed that unless the opening, or stoma, was in the antrum (*i. e.*, close to the pylorus) the food, even when fluid, was pushed through the pylorus rather than through the stoma.

With peristalsis only in the pyloric end of the stomach, with the intragastric pressure much greater at the pylorus than elsewhere in the stomach, and with the food in the pyloric end normally more fluid than that in the cardiac end, the food is forced into the intestine through the pylorus, and not through the artificial opening, when both ways are offered.

Circulation of the food through the pylorus to the duodenum and back to the stomach through the anastomosis has been repeatedly observed, but it was not followed by the clinical symptoms of the "vicious circle." The circulation was observed best when the stomach was very full. The stretching of the stomach separates the lips of the stoma and draws the intestinal wall into line with the gastric wall. The openings into the intestine at the stoma then become mere slits, and act like valves, permitting the entrance, but preventing the exit, of the food.

The clinical symptoms of the "vicious circle" have been observed in animals in which a kink of the intestine has been found just distal to the anastomosis. Kinks at this point cannot be straightened by peristaltic activity because the circular fibers of the intestine are cut at the nearby stoma.

It is important that food be mixed with the secretions poured into the duodenum; these juices are highly effective in digestion, and also neutralize the acid chyme. If food leaves the stomach by the stoma it is not mixed with these secretions. Jejunal ulcers after gastro-enterostomy may be due to the presence of acid in a region in which inorganic acid is not normally found.

From the above considerations, it was concluded that the stoma should be large and as near to the pylorus as possible; that the circulation of the food be rendered less probable by avoidance of overeating, and that so far as possible kinks be obviated by attaching a narrow band of the distal gut to the stomach for several centimeters

beyond the stoma, thus permitting peristalsis to become an effective force.

The probability of a circulation of the food whenever the pylorus is left open, the non-mixture of the food with the digestive and neutralizing fluids in the duodenum, and the ever present danger from kinks in gastro-enterostomy make the operation not an ideal one.

In pyloroplasty (preferably the Finney operation) these objections are avoided. And a too rapid exit of the food through the pylorus is prevented by the rhythmic segmentation of the food in the duodenum, an activity which in part replaces the functions of the pylorus, and also mixes the food with the pancreatic juice and the bile.

OPERATIONS FOR CANCER OF STOMACH.

Moynihan²² reports the results in 59 cases operated upon between Aug. 23, 1897, and July 1, 1905. Nine patients died soon after the operation. Of 35 patients upon whom gastro-enterostomy was performed one lived two years and four months; six others were living at the time of the report. Of ten cases upon whom gastro-ectomy, partial or complete, was done, one is alive and free from recurrence at the end of four and a half years, two died within a week and four are still living at intervals of five months to two and a half years since the operation. Of the remaining cases, upon whom there were five gastrostomies, three jejunostomies and six exploratory laparotomies, none lived over eighteen months after the operation.

Sixteen of the gastro-enterostomies gave a history of an ulcerated stomach.

Moynihan calls attention to the fact that at autopsies cancer of the stomach may occasionally still be a local condition.

Clairemont²³ reports upon the 258 operations upon the stomach which have been performed by Professor v. Eiselsberg between March, 1896, and January, 1904. The total mortality was 23.3%. This is in contrast to a mortality of 31.6% in his previous operations. The mortality among the 94 cases of gastric ulcer and sequela was 16% and for the 134 cases of new growth was 31.3%.

THE PASSAGE OF DIFFERENT FOOD-STUFFS FROM THE STOMACH AND THROUGH THE SMALL INTESTINE.

Cannon²⁴ has arrived at the following conclusions from his work on the passage of food through the stomach and intestine.

Fat, carbohydrate and proteid foods, uniform in amount (25 cc.) and consistency, were mixed with a small amount of subnitrate of bismuth and fed to cats deprived of food for at least twenty-four hours. The rate of gastric peristalsis observed by means of the Röntgen rays was usually slower for fats (5.2 waves per minute) than for carbohydrates (5.8 waves per minute), but the

²² British Med. Jour., 1906, Feb. 17, p. 370.

²³ Archiv. f. klin. Chirurgie, 1905, Bd. 76, p. 180.

²⁴ Amer. Jour. Phys., 1904, vol. xli, p. 387.

variation was so great as to make a more definite statement unsafe.

At regular intervals for seven hours after feeding, the shadows of the intestinal contents were traced on transparent paper by means of a fluorescent screen and the Röntgen rays. Since the intestinal contents vary only slightly in diameter, the aggregate length of the shadows can be taken to indicate the relative amount of food present in the small intestine at various intervals, and in various animals at the same interval after feeding. In the early stages of intestinal digestion, before much absorption has occurred, the aggregate length of the shadows at different intervals indicates the rate of discharge from the stomach.

Fats remain long in the stomach. The discharge of fats begins slowly and continues at nearly the same rate at which the fat leaves the small intestine by absorption and by passage into the large intestine. Consequently, there is never any great accumulation of fat in the small intestine.

Carbohydrate foods begin to leave the stomach soon after their ingestion. They pass out rapidly, and at the end of two hours reach a maximum amount in the small intestine almost twice the maximum for proteids, and two and one-half times the maximum for fats, both of which maxima are reached only at the end of four hours. The carbohydrates remain in the stomach only about half as long as the proteids.

Proteids frequently do not leave the stomach at all during the first half hour. After two hours they accumulate in the small intestine to a degree only slightly greater than that reached by carbohydrates an hour and a half earlier. The departure of proteids from the stomach is therefore slower at first than that of either fats or carbohydrates. An exception to this general statement was found in egg-albumin, which, both in its natural state and in coagulated form, was discharged from the stomach at about the carbohydrate speed.

When carbohydrates and proteids are mixed in equal parts, the mixed food does not leave the stomach so slowly as the proteids, nor so rapidly as the carbohydrates; the discharge is intermediate in rapidity.

In a mixture of fats and proteids in equal parts, the presence of the fat causes the proteid to leave the stomach even more slowly than the proteid itself. Fat mixed with carbohydrate in equal amounts also causes the carbohydrates to pass the pylorus at a rate slower than their normal.

Doubling the amount of carbohydrate food (50 cc. instead of 25 cc.) increases the rapidity of the carbohydrate outgo from the stomach during the first two hours; whereas doubling the amount of proteid food strikingly delays the initial discharge of proteid from the stomach.

The process of rhythmic segmentation is seen with all three kinds of food-stuffs, and the frequency of its occurrence corresponds roughly to the amount of food present in the intestine; a measurement of the length of the segmenting

masses in a given number of cases shows that at the regular intervals of observation, during the first seven hours after feeding, the amount of segmenting activity in the presence of carbohydrates was much greater than in the presence of either fats or proteids. Egg-albumin is excepted in this general statement.

The interval between the feeding and the appearance of food in the large intestine is variable, but the mean for carbohydrates is about four hours, for proteids about six hours, and for fats about five hours. After time is allowed for the later start of proteids from the stomach there still remains a probability that the proteids pass through the small intestine more slowly than do the carbohydrates.

GALLSTONES.

Naunyn² has contributed another of his interesting articles on gallstones.

The modern era of cholelithiasis began thirteen years ago. Agreement was soon reached that the cause of the formation of the gallstone lay in an infectious cholangitis, and the important rôle which infections of the gall bladder played was recognized by every one. Great advances have been made by the aid of surgery. In general, early operation has been given up, but chronic recurrent attacks of gallstones are in the domain of surgery. Medical treatment consists in rendering the gallstones latent, not in their solution, and warm applications and hot Carlsbad water still remain our best therapeutic aids. It still is not generally understood that chologogues are not of advantage. It is not secretion of the liver cells which is needed, but a freer flow through the ducts. The sphincter ductus choledochi opposes a strong resistance to the flow of bile, and as long as it is closed it is of no avail to increase the secretion. The sphincter will withstand a pressure of 700 mm. water, while the bile is secreted with a pressure of only 300 mm. Chologogues therefore cannot avail much.

The following can be said of the solubility of the calculi: These consist of cholesterol, calcium bilirubin, calcium carbonate and phosphate. Calcium bilirubin and the inorganic calcium salts are insoluble in the bile, but cholesterol on the other hand is soluble in considerable amount.

Indeed normal bile practically never contains so much cholesterol but that still larger quantities can be dissolved in it. There is then no question but that the cholesterol stone can be gradually dissolved, and this was proved thirty years ago by Labes. If the cholesterol dissolves from a stone it is possible that the stone may break up and the different portions be expelled by the force of the bile current. Such a solution and breaking up of a well formed gallstone occurs most seldom in man. Even if the stone falls to pieces on account of the interference with the normal motility of the gall bladder the various portions will not be wholly expelled. A residuum of bile remains. Out of one thousand autopsies on

² *Mitt.* 1. u. 2. Grenzgebiete d. Medizin u. Chirurgie, 1905, vii, 14, p. 537.

patients in whom gallstones were present, Naunyn has seen not more than ten instances of evidence of solution of a stone. These occurred with stones of the size of cherry stones. Such stones consist of cholesterin, but they are not the massive, crystallized cholesterin stones. The change in the stone is quite probably due to the action of bacteria, and not a simple solution, though the latter may be possible, and as proof of this he adduces the layers of inorganic calcium phosphate and carbonate. These inorganic calcium bearing stones are often recognizable by their green color, showing that the bilirubin has been oxidized to biliverdin, and this goes hand in hand with the activity of the oxidizing bacteria. The deposition of inorganic calcium salts in the secretion of the mucous membranes and the formation of calculi out of inorganic calcium in animals everywhere is due to the action of the bacteria.

The marked petrification of the biliary calculi often is seen together with the solution of the non-petrified substances of the stone, thus indicating the action of the bacteria. But there are other, and indeed more numerous evidences of the solution of gallstones without the simultaneous formation of inorganic calcium, and such cases are the ones to study; perhaps by the aid of modern surgery a litholitic form of bacteria may be discovered.

The demonstration of biliary calculi with the x-ray is often mentioned, but the results are of no great value in diagnosis. It is true, Naunyn says, that one may see with the x-ray stones, and obtain these at a later operation, but he does not believe that the shadows seen were due to the stones, for it may be found that the bladder in which the stones lay was filled with concentrated bile which may transmit the x-ray far less than the stones themselves. If one lays one of these stones on the front or back of the body of a fairly corpulent person, it might be seen with the x-ray. If, however, the stone is first placed in an ox gall bladder filled with thin ox bile, the stone scarcely makes a shadow, and placed in the gall bladder of a man filled with thick human bile no shadow at all is obtained, and if the bile is very thick the stone may show as a bright spot. This does not, however, settle the whole question. The power of a stone to give a shadow with the x-ray depends on its content of calcium, and this is extraordinarily variable. Cholesterin stones and common gallstones often contain .5% or less of CaO , while others have as much as 21%. These could be seen even when placed in thick human bile. It is on account of these stones which are not so very uncommon that an attempt at demonstration with x-rays is indicated.

Gallstones may form rapidly, and without doubt even in a few days, perhaps hours. The cholesterin stones of large size are unquestionably old. Calculi with a soft nucleus and many calcium bilirubin stones, even though they may be large, may have more rapid development. Secondary infiltration with cholesterin always speaks for an old stone. Naunyn then describes stones which illustrate these points.

The diagnosis of simple gallstones causes little trouble, not so the differential diagnosis of gallstones and cancer of the bile ducts or liver. The diagnosis of gallstones alone in the difficult cases means a differentiation from disease of the stomach. Localized tenderness over the gall bladder and jaundice are the most important aids, and when these fail the history of the first attack cannot be too much emphasized. In the later course the symptoms may depend upon the meals on account of adhesions near the pylorus and duodenum. The first attack comes unannounced, seldom after a meal or error of diet, but rather at a time — midnight — when disturbances with the stomach seldom occur, though the opposite holds for intestinal pain. It is, further, seldom that the attack though beginning in the stomach does not clearly show a relation to the right hypochondrium. This is a decided advance toward a diagnosis.

Acute cholecystitis is characterized by either fever, local pain, sensitiveness or edema. Quite difficult is the diagnosis of empyema of the gall bladder when associated with cholelithiasis.

Acute choledochus obstruction Naunyn holds not possible of diagnosis. It is made in those cases of gallstone colic in the old sense when it was reported that jaundice was due to the obstruction of the ducts by the stone. This premise does not now hold. The diagnosis of a chronic obstruction is not much more satisfactory. Jaundice in gallstones is far oftener due to an inflammatory condition than to an obstruction with a stone. The infectious cholangitis is at the bottom of the matter. Jaundice, even of the chronic type, may occur with gallstones without these having left the gall bladder, and without stones in the larger ducts. Conversely, jaundice may be absent when there is marked obstruction of the ducts with stones.

Ehret suggests that when complete absence of bile from the feces can be excluded, and thus suspicion is diverted from cancer, a good history of gallstones in a patient without fever, who is rather frequently attacked with sudden, yet not very painful, exacerbations with sudden rises of temperature, points to stones in the common duct. A stone impacted in the duct near the duodenum renders infection of the ducts easy, and the resulting inflammation results in a slowing of the biliary flow with severe consequences, though these may be temporary.

The diagnosis between gallstones and cancer is of the greatest importance. The cancer may be alone or associated with gallstones. The surest symptom of cancer is the persistent acholia of the stools. This is not absolute any more than variation in the presence or absence of bile in the stools speaks definitely for a gallstone; yet the general rule is a good one. Naunyn no longer puts much value on the condition of the gall bladder, whether contracted or dilated, but he does believe the absence of an enlarged spleen, with the prolonged existence of a questionable jaundice, to be a strong argument against gallstone obstruction. Other things being equal a

large palpable splenic tumor speaks for cholelithiasis.

A neoplasm with gallstones is still more difficult of diagnosis. Gallstones in old people with chronic jaundice make one suspicious. Cachexia suggests cancer only when of rapid development. Gallstones combined with marked jaundice and even large and repeated hemorrhages give rise to it only after months. Ascites requires consideration. Metastatic lymph glands in the left supraclavicular fossa occur too late to be of value.

The following test²⁸ for bile in the feces is most useful: It is often of great advantage to know whether bile is present or not in the feces, but previous methods have been too cumbersome for the general practitioner. The following method which is essentially that of Schorlenmar will be found most useful: Mix thoroughly a portion of feces, equivalent to a walnut in size, with 100 cc. of a concentrated aqueous solution of corrosive sublimate. Set aside for twenty-four hours in a wide-mouthed covered glass dish. All particles containing hydrobilirubin are colored red, while simultaneously all particles with bilirubin assume a green shade.

Reports of Societies.

SOCIETY OF AMERICAN BACTERIOLOGISTS.

SIXTH ANNUAL MEETING, ANN ARBOR, MICH., DEC. 27, 28 AND 29, 1905.

EDWIN O. JORDAN, PH. D., Chicago, President; F. P. GORHAM, Providence, Secretary.

SPROCHETAL INFECTION OF WHITE RATS AND OBSERVATIONS UPON THE MULTIPLICATION OF THE SPIROCHETES IN FLUID MEDIUM.

(Preliminary communication.) DIS. NOBIS, PAPENHEIMER and FLORENZO, Pathological Laboratory, Bellevue Hospital, New York. The authors have been able to inoculate successfully white rats and to keep the organism alive through about twenty-five generations. A subcutaneous inoculation of blood containing spirochetes is followed in two or three days by the presence of spirochetes in the circulating blood. These persist for from one to three days. In rats, no relapses occur, there are no obvious symptoms of illness, no local reaction and no visceral lesions of consequence except turgescence and enlargement of the spleen.

Immunity is probably conferred by previous infection. Inoculation of spirochetes into blood plus small doses of serum from animals that have gone through a previous infection retards or inhibits the development of the organism in the blood of the rats.

In human and rat blood, to which sodium citrate has been added, to prevent coagulation increase in the number of organisms evidently occurs. The authors have not been able to grow the organism in this medium beyond the third generation. Citrated rat blood, kept at room temperature for six days, retained unimpaired its infectious qualities.

AGGLUTINATION AND BIOLOGICAL RELATIONSHIP IN THE PRODIGIOSUS GROUP.

MARY HEFFERNAN, University of Chicago. A series of organisms with cultural characteristics like those of *B. prodigiosus* were examined for agglutinative

activity. This series had been under the writer's observation for five years, and the biological relationship of the twenty-two different members of the group had been fairly well determined.

Agglutination tests showed

(1) A high degree of interaction among those members of the group which were classed together by the sugar fermentation test.

(2) Identity of reaction of races known to have been derived from the same culture eight or ten years previously, and kept in different laboratories.

(3) Agglutinative reaction among those members of the group which tend to lose the power of pigment production, including one race which produces only a soluble red pigment. No reaction was obtained in this case with *B. fluorescens liquefaciens* or *B. lactis erythrogenes*.

(4) Much confusion and inequality of interaction among other members of the group closely related biologically.

The difference between agglutinogenic power and agglutinability was clearly due, in some cases, to a viscid capsular condition of the bacilli. On the other hand, readily agglutinable cultures did not possess correspondingly high agglutinogenic power.

Experiments made to determine the optimum temperature for the agglutination process showed that better results were obtained at either 0° or 55° C. than at room temperature or at 37° C. The action of convection currents in the tubes of serum dilution and bacilli at high and low temperatures was suggested as an explanation.

It was found that the addition of 1% formalin to salt solution suspensions of cultures made no difference in the agglutinations results, if the cultures thus formalized were allowed to stand for some time. Freshly added formalin seemed to inhibit agglutination.

Further experiments are under way to determine more exactly the action of formalin in the agglutination process.

A STUDY OF THE LAWS GOVERNING THE RESISTANCE OF *B. COLI* TO HEAT.

STEPHEN DEM. GAGE and GRACE VAN E. STOUTIGTON. Experiments were made in which it was determined that the great majority of the bacteria in any *B. coli* culture are destroyed by five minutes' exposure between 50° and 60° C. A few individuals, however, in each culture will survive much higher temperatures, in some cases remaining alive after exposure to 90° C. The very close range, about 10° C. of temperature at which the destruction of the majority of the individual bacteria occurred, as compared with the considerable range about 35° C. in the temperatures at which complete sterilization was effected, would indicate that the determination of this majority death point would be of more value in species identification than is the determination of the absolute thermal death point as at present employed.

Using thermal death point tests alone, this culture of *B. coli* would be included among the sporulating bacteria, although there was no morphological evidence that true spores, endospores, were produced.

Experiments were also made to determine whether, by successively selecting cultures originating from individual organisms which had survived temperatures above the majority death point and submitting these cultures to the death point tests, a race of organisms could be propagated in which the majority of the individuals would be able to resist higher temperatures than was the case with the original culture. The experiments ruled not only to produce such a race, but the results indicated the tendency toward

²⁸ Outlines of Medical Diagnosis, Eighth Edition, 1906, p. 30.

the production of a degenerate race whose majority death point remained the same as for the original culture, and whose absolute thermal death point was reduced toward the majority death point as the number of successive generations was increased.

BIRD PLAGUE.

(A preliminary note.) J. J. KINYOUN: Beginning in May, 1905, the writer examined several dead birds received from a dealer in Washington, D. C. On examination, all these presented certain definite lesions. The organs notably affected were the liver and spleen. A provisional diagnosis was first made of tubercle, but on examination it was negative. The lesions found in the liver and spleen were yellowish nodules of varying size which projected from the surface of the organs. The majority of the nodules were surrounded with a well-marked zone of inflammatory tissue. There were also spots of coagulation necrosis interspersed between the nodules. There was also found a catarrhal exudate affecting the upper air passage. In a few instances, there was enteritis. Direct microscopical examination showed a small bacillus with rounded ends, and morphological and tinctorial propensities resembled bacillus pestis. The organisms were present in enormous numbers in the nodules, particularly in those of the spleen. It could also be identified and easily isolated from the heart's blood and all other organs. The cultural characters are: it grows rather slightly on peptone bouillon, agar; it does not liquify gelatin, nor does it ferment any of the sugars except mannite. Grown on Hankin's salt agar it assumes pleo-morphism; closely resembles the organism of Bubonic plague. It grows best in bouillon or on agar containing a small amount of sterilized horse or calf serum. Calf serum agar containing 2% is coagulated. It is pathogenic to rabbits, sparrows, canaries, finches, mocking birds, thrushes and parakeets. Chickens are immune.

HOW SHALL THE POTENCY OF ANTITETANIC SERUM BE DETERMINED?

E. M. HOUGHTON, Ph.C., M.D., E. C. L. MILLER, M.D., and F. O. NORTHEY, M.D., Detroit, Mich.: Experience has shown that the Ehrlich test for determining the strength of antiphtheric serum is very reliable and has been adopted by the United States Department of Public Health and Marine Hospital Service as a method of standardizing this serum. Many methods are employed for measuring the strength of antitetanic serum, but none have been generally adopted in this country. The results of laboratory tests indicate that the sera found on the market vary enormously in strength, as tested by the modified Behring method. It would seem desirable that a method be adopted for testing antitetanic serum similar to that in use for determining the strength of antiphtheric serum, but it seems to the writers that the test animals should be guinea pigs and that the units of strength should be such that a curative dose of 10 cc. of antitetanic serum would contain approximately the same number of units as the curative dose of antiphtheric serum, as recommended by the United States Pharmacopeia.

A committee was appointed to consider the question of standardization of serums.

THE ACTION OF SO-CALLED COMPLEMENTOID IN IMMUNE SERUM.

W. H. MANWARING, Indiana University: Working with goat serum, immunized against sheep corpuscles, the action of so-called "complementoid" was estimated quantitatively and plotted graphically. From the

curves so obtained, the following conclusions are drawn:

(1) Hemolytic complementoid, added in increasing amounts to hemolytic serum, or to an artificial hemolytic amboceptor-complement mixture, causes, at first, a rapid increase in hemolytic power.

(2) This increase soon reaches an apparent maximum, after which a further increase in complementoid causes (i) no change, (ii) a rapid diminution in hemolytic power or (iii) a slow increase in that power.

(3) This variability in the action of complementoid when used in large amounts depends, at least in part, on the length of time the serum is heated to produce the complementoid.

(4) The action of complementoid is so pronounced that quantitative work that does not take its presence into consideration is practically valueless. This applies to such experiments as those forming the basis for the doctrine of "deviation of complement."

(5) It would be difficult to explain the action of complementoid by means of any of the existing hypotheses regarding the action of immune serum.

(6) No conclusion is yet drawn as to whether the so-called "complementoid" is really a degeneration product, or whether it may not be a mixture of split-products of other serum components, or, in part at least, certain thus far unrecognized thermo-stable components of normal serum.

NOTE ON THE THERMAL DEATH POINT OF B. DYSENTERIÆ SHIGA.

FROST and SWENSON, University of Michigan: Three strains of the Flexner-Harris type and one of the shiga type were used in the experiments. The technique employed was that recommended by the Bacteriological Committee of the American Public Health Association except in a few minor details.

It was found that the majority of organisms were killed between 55° and 60° C., but that frequently a relatively small number would persist up to 70° C. It was proven that the difference in resistance was due neither to the reaction nor to variations in the composition of the medium used.

During the discussion of this paper, it was suggested that the high resistance of some of the organisms might be due to masses of bacteria, the inner cells of which were protected to a certain extent from the heat.

A METHOD OF ISOLATING THE PNEUMOCOCCUS FROM MIXED CULTURES.

REUDIGER, Institute Infectious Diseases, Chicago: Basing his work on the demonstration of Hiss that pneumococci ferment inulin, while streptococci do not, the author has devised a litmus inulin agar medium in which the pneumococci develop as red colonies. By adding 1 cc. of sterile ascites fluid to each tube of media just before plating, a satisfactory growth is obtained in twenty-four to seventy-two hours. None of the other mouth bacteria studied produced red colonies on this medium. Twenty-two cultures of the pneumococcus were isolated and studied in detail.

OBSERVATIONS UPON THE PHAGOCYTIC POWER OF THE BLOOD OF NORMAL HUMAN BEINGS.

JOSEPH MCFARLAND and L'ENGLE, Philadelphia: The blood of fifteen presumably normal individuals were examined by the method devised by Leishman and modified by Wright and Douglas and the authors. The experiments were all performed between three and four in the afternoon, Staphylococcus pyogenes aureus being selected for the tests.

It was found that a uniform suspension was desirable since the number of bacteria taken up by the leucocytes varied with the strength of the suspension, and this was practically accomplished by comparing suspensions with a permanent turbidity standard. The clinical bearing of these experiments is indicated by the fact that those individuals whose phagocytic index was lowest had suffered from carbuncles, boils or became infected from slight causes. The authors approve of Marino's stain for demonstrating the leucocytes and contained bacteria and believe that the modified technique is adapted to clinical application. They conclude that there is no uniformity in the phagocytic indexes of the bloods of supposedly healthy individuals, that the phagocytic index of the same individual may or may not vary on different days and that while an exceptionally low phagocytic count usually indicates a present or past predisposition to suppuration, the phagocytic index may not be below the average in all cases in which there is a tendency to suppuration. The phagocytic index varied in the fifteen persons from 4.35 to 23.125.

THE VALUE OF THE VOGES-PROSKAUER REACTION.

N. McL. HARRIS, University of Chicago: The red coloration sometimes seen in fermentation tubes on standing, after the addition of caustic potash solution, and first described by Voges and Proskauer in 1898, has recently received renewed attention owing to the more recent work of Durham and MacConkey and Howe and MacConkey who recommend it for differentiating certain groups of bacteria. Harris, however, finds that the reaction is not confined to any one particular group of bacteria but occurs widespread and irregularly amongst bacterial species. The nature of the reaction is unknown.

THE PRODUCTION OF ACID AND ALKALI BY BACTERIA.

E. O. JORDAN, University of Chicago: Not only muscle sugar as shown by Theobald Smith in 1895 but other substances in ordinary nutrient media under the influence of bacterial activity produce strong acid reaction.

The liquefaction of gelatin by bacteria or their sterile enzymes always gives rise to a marked acid reaction which in some cases may be diminished by the simultaneous production of ammonia.

In nutrient agar, on the other hand, an alkaline change takes place. A standard reaction for culture media, therefore, is valid only as an initial reaction. Alkali production is not a synthetic process, as has been claimed by some but the result of decomposition of nitrogenous bodies.

Bacteria make their own reaction in broth, gelatin or agar. That reaction depends upon the nature of the bacterium, the composition of the medium and the precise period of growth when the reaction is tested.

MOSQUITO TRYPAOSOMES.

F. G. NOVY, W. J. McNEAL and H. N. TORREY, Ann Arbor, Mich.: Flagellates present in mosquitoes do not represent stages in the life history of intracellular parasites but are actually cultures in vivo of trypanosomes present in the blood of the animals or birds fed upon.

Of more than 800 mosquitoes captured along the river bank and fed upon perfectly clean animals such as rats, guinea pigs and pigeons and examined at varying intervals of thirty-six to seventy-two hours after feeding, 15% were found to have a flagellate infection of the intestinal tract.

Several distinct forms of trypanosomes were met with. With much difficulty, mixed cultures of two

forms were obtained,—*Herpetomonas subulata* associated with a minute coccus and *Crithidia fasciculata* in association with a yeast, these cultures now having been grown in the laboratory for six months.

The cultural forms of these two organisms are exactly the same as those seen in the gut of the mosquito. Animals inoculated with the cultures failed to show an infection.

The fact that the trypanosomes met with by various investigators in the stomachs of Tsetse flies, leeches, etc., are distinctly "cultural forms," showing the blepharoplast anterior to the nucleus, indicates that all such forms can be cultivated in the test tube. The *Herpetomonas* forms found are true cultural trypanosomes and future studies will probably reveal the blood parasite from which they are derived. The *Crithidia* show no undulating membrane in the ordinary truncated form, and on account of their peculiarity are to be considered for the present, at least, as representing a distinct genus.

SPIROCHETE OBERMEIERI.

F. G. NOVY and R. S. KNAPP, University of Michigan: In from thirty-six to forty-eight hours after an intraperitoneal inoculation of infected blood into white rats, the organism appeared in the blood but disappeared again within twenty-four hours, owing, as it was shown, to the formation of antibodies, and failed to reappear. The rats were then immune to subsequent inoculation. Spirochetal blood when kept *in vitro* retained its virulence for fifteen days.

The blood of rats, which have received repeated injections of spirochetal blood, shows marked preventive and curative action. If such blood be injected at any time before or after the injection of spirochetes up to the time when under normal conditions the organisms should appear in the blood, they fail to appear, although numerous in control animals. The injection of immune blood into rats having from 5 to 10 spirochetes to $\frac{1}{2}$ the oil immersion field causes disappearance of the organisms within one hour, with no subsequent reappearance, while in controls they persist for twenty-four hours. Spirochetal blood filtered through a Berkefeld filter under 50 lbs. pressure caused a typical infection when injected into rats. This result would appear to have a bearing on the so-called ultra microscopic organisms. While the relapsing fever of Europe and the sick fever of Africa are probably caused by different spirochetes, the authors think they have a basis for curative treatment for both.

ABNORMAL CHEESE TROUBLES DUE TO LACTOSE FERMENTING YEASTS.

H. L. RUSSELL and E. G. HASTINGS: The defective trouble in cheese here described is due to the presence of a milk sugar fermenting yeast. This yeast grows rapidly on milk or whey, especially when there is considerable acidity, producing alcohol, carbonic acid and undesirable flavored products. It is sterilized at 60° C. in ten minutes but resists 55° C. (the temperature used in the manufacture of Swiss cheese) for thirty minutes. This type of organism is much more abundant in regions where Swiss cheese is made than where the American cheddar system is practiced. Its presence is due to methods of manufacture which favor the production of lactic acid and the infection of the fresh milk.

THE EMPLOYMENT OF GLYCERIN AS A DIFFERENTIATING MEDIUM FOR CERTAIN BACTERIA.

EDUARDO ANDRADE, Florida State Board of Health: The addition of glycerin to nutrient media increases the acid-producing power of certain intestinal bacteria.

Acid fuchsine (Gruebler) neutralized to the point of decolorization with caustic potash has proved to be a very sensitive indicator. It does not affect the growth of bacteria. The results obtained with the more common media were not satisfactory owing, probably, to changes of reaction in sterilization. The best results were obtained with Dunham's peptone solution containing 6% glycerin and 2% acid fuchsine.

The dysentery group shows quite a range in acid production as regards both time and amount. Of this group; the bacillus Y of Hiss and Russell, B. paracolon, Strong and Kurth, form a distinct group of themselves.

ABSORBENT COTTON AS A MEDIUM FOR DISTRIBUTING *PS. RADICICOLA*.

H. A. HARDING and M. J. PRUCHE, New York Agricultural Station: Absorbent cotton wrapped in paper and tin foil is now widely used by nitro-culture companies as a means of distributing *Ps. radicicola*.

Experiments have shown that the organisms are unable to withstand the dessication accompanying this method.

Repeated examinations of twenty-five separate packages of cotton gave only a occasional colony resembling *Ps. radicicola*, and in most cases not a single suspicious colony was found.

As a check on the accuracy of these examinations, duplicate samples from six packages were examined in other laboratories.

Two separate laboratory trials with bouillon cultures of *Ps. radicicola* placed upon absorbent cotton showed that all but an occasional organism died within a few days.

The details of the work are given in the New York Agricultural Experiment Station *Record*, Bulletin 270

ISOLATION OF TRYPANOSOMES FROM ACCOMPANYING BACTERIA.

F. G. NOVY and R. S. KNAPP, Ann Arbor, Mich.: By means of a small glass spatula made by drawing out the end of a glass rod, a little of the mixed culture was spread in a series of streaks over six Petri dishes containing solidified blood agar. The sealed dishes are then set aside at room temperature for ten to twelve days. The last plate or two of the series will be found to show isolated colonies of trypanosomes which can then be transplanted in the usual way to the test tube. In studying the flagellates found in the intestinal canal of insects and other sanguivora, the intestinal contents can be spread directly over the plates in the manner indicated.

A NOTE ON THE INDOL PRODUCING BACTERIA IN MILK.

S. C. PRESCOTT, Massachusetts Institute Technology: The occurrence of indol-producing bacteria in milk suggests the possibility of some connection between these organisms and the intestinal diseases often so prevalent in children fed on milk.

A large number of samples of fresh milk from 175 different farms have been examined to determine the relation between the indol-producing bacteria and the total number present. The samples were in general about six hours old at the time of examination.

In all, 524 samples were examined ranging in total numbers from less than 5,000 to 121,000,000 bacteria per cubic centimeter.

Twenty-five per cent gave strong indol reaction.

There was a constant relation between total count and the occurrence of indol, the high count samples giving the largest per cent with indol reaction. In samples having above 1,000,000 bacteria to the cubic

centimeter, 70% showed indol production, while in those below 25,000, indol production was found in but 12%.

KINDS OF BACTERIA CONCERNED IN SOURING OF MILK.

P. G. HEINEMANN, University of Chicago: All so-called lactic acid bacteria belong to two groups—the colon-aerogenes group and the streptococcus group. Investigations lead to the following conclusions: *Bacillus acidilactici* is a myth. The ordinary bacteria producing lactic fermentation are *Bacillus aerogenes* var. *lacticus*, and *Streptococcus lacticus*. The possibility of *B. coli* participating in lactic fermentation is not excluded. *Streptococcus lacticus* (Krusse) agrees in morphological, cultural and coagulative properties with pathogenic, fecal and sewage streptococci.

Souring of milk is caused by co-operation of both groups of bacteria and is participated in by peptonizing bacteria always present in milk. Gas is produced by *Bacillus aerogenes*, var. *lacticus*, but, as a rule, is checked and finally stopped by the ascendancy of the *Streptococcus lacticus* (Krusse). Acids produced during fermentation by both classes to a marked degree. Lactic acid bacteria are of intestinal origin and gain access to the milk with particles of cow feces.

Artificial lactic acid fermentation in sterilized milk can be produced by inoculation of cultures of either group, or better, by the two groups combined. Since *Streptococcus lacticus* (Krusse) is invariably present even in fresh milk collected with good precautions, the sanitary significance of streptococci in market milk will need further investigation.

THE MICROSCOPIC ESTIMATE OF BACTERIA IN MILK.

DR. F. H. SLACK, Boston Board of Health Laboratory: A definite quantity of milk (2 cc.) is centrifuged for ten minutes in a special apparatus by which the sediment is collected on a rubber stopper and the sediment thus obtained is smeared evenly over a known space (4 sq. cm.), dried and stained with methylene blue.

Microscopic examination shows approximate number and morphology of bacteria present as well as the presence of pus and streptococci.

As a rough estimate, each bacterium found in a representative $\frac{1}{2}$ oil immersion field represents 10,000 bacteria to a cubic centimeter in the sample of milk examined.

Advantages are: rapidity of examination, accuracy, easily learned technique, lack of much costly apparatus.

The writer believes the method applicable for certifying milk.

THE QUANTITATIVE DETERMINATION OF LEUCOCYTES IN MILK.

ARCHIBALD R. WARD, University of California: A series of duplicate determinations from the same sample of milk were made by the method of Doane and Buckley of the Maryland Agricultural Experiment Station and by the method described by Dr. Stewart of the Philadelphia Bureau of Health.

The Doane-Buckley method gave more satisfactory results with determinations than did that of Dr. Stewart.

The numerical results by the Doane-Buckley method varied from four to forty times higher than those obtained by the Stewart method.

LACTIC ACID BACTERIA.

W. M. ESTEN, Wesleyan University: Samples of milk were studied from nearly every section of the United States and Canada. Two distinct classes of

lactic acid bacteria were found. First, the gas-forming or aerobic group consisting of the *B. coli communis* and *B. lactis aerogenes* with all of its varieties. This group may be considered as a detrimental contamination to milk and its products. Second, the non-gas-forming, or facultative anaerobic group which in the author's opinion consists of but one species of bacterium (*Bacterium lactis acidii*) with its variations of form and of power for curdling milk. Owing to these differences the organism has been described under various names by different investigators. Its characteristics of growth on various media are, however, always distinctive, the most favorable media being milk, milk agar, agar and dextrose bouillon. Its presence in milk is beneficial as it opposes the growth of putrefactive and disease organisms.

Recent Literature.

Differential Diagnosis and Treatment of Disease.

A Textbook for Practitioners and Advanced Students. By AUGUSTUS CAILLÉ, M.D., Fellow of the New York Academy of Medicine; Member and ex-President of the American Pediatric Society; Professor of Diseases of Children, New York Post-Graduate Medical School and Hospital; Visiting Physician to the New York Post-Graduate and German Hospitals; Consulting Physician to Isabella Home and Hospital, etc. Illustrated. Pp 867. New York and London: D. Appleton & Co. 1906.

The aim of the author in offering this book to the medical profession is stated in his own words, as follows: "To bring the broad domain of practical medicine fairly within the grasp of the family physician, and to assist the advanced student in acquiring a clinical foundation has been my aim." It has further been the desire of the author "To re-establish the relations of internal medicine, surgery and the several specialties," and so far as possible to break down what he considers, with much justice, the artificial and arbitrary barriers which appear to separate the various branches of medicine. Although assisted by various collaborators, the author has written the great bulk of the book himself.

In carrying out his very worthy aim Dr. Caillé has discussed briefly and with the aid of numerous illustrations a large variety of subjects connected with medicine in its broad sense. The brevity of the various sections is a noticeable feature of the work, and should commend itself to the reader who must, however, recognize the fact that such brevity is not in all cases compatible with the proper appreciation of the importance of the subject matter. We recommend the book as a well arranged and adequate epitome of the present status of diagnosis and treatment in the broad field of so-called general medicine inclusive of what have come to be known as specialties.

It is altogether advisable that such a survey as this should appear from time to time not that it is likely to check the beneficent progress of specialism, but that it may do its share towards impressing the unity of the various departments of medical theory and practice.

Lectures upon the Principles of Surgery, delivered at the University of Michigan by CHARLES B. NANCY, A.M., M.D., LL.D., Professor of Surgery and of Clinical Surgery in the University of Michigan; Professor of Surgery in Dartmouth Medical College; Chief Surgeon, United States Volunteers, etc. With an appendix containing a résumé of the principal views held concerning inflammation by WM. A. SPITZLEY, A.B., M.D., Late Senior Assistant in Surgery, University of Michigan. Second edition, thoroughly revised. Philadelphia and London: W. B. Saunders & Co. 1905.

This is the second edition of this series of lectures on a most interesting subject. The book is divided into thirty-six lectures which the author gives to his students at the University of Michigan. It takes up the fundamental principles of injury, inflammation and repair, the various systemic infections, hemorrhage, the treatment of wounds, sterilization of materials, shock, collapse, the various types of delirium, and anesthesia.

The lectures are written in a facile style and are interesting to read. A concise résumé of the principal views held concerning inflammation is appended at the end by Dr. W. A. Spitzley.

There are few subjects in surgery that have undergone more rapid changes than that of the process of repair. The term "inflammation" has been regarded by some pathologists as so inexact that it would be desirable to abolish it. The term, however, expresses a condition which is so common and so well recognized that it would be impractical to give it up.

On the whole, although we differ from some of the views expressed by the author, we like the book.

The Animal Parasites of Man. A handbook for students and medical men. By MAX BRAUN. Third enlarged and improved edition with 294 illustrations in the text. Translated from the German by PAULINE FALKEL, brought up to date by LOUIS W. SAMPSON, M.D., and FRED. V. THEOPHIL, M.A. New York: William Wood & Co. 1906.

The study of animal parasites, spoken of more frequently as medical zoology or parasitology, has grown within the past decade into a specialty which can no longer be ignored by medical schools. Parasites are evidently growing more numerous in temperate climates, owing to more extensive intercourse with the tropics and the influx of parasite-ridden foreign populations. Some of these introduced parasites will without doubt permanently establish themselves. The future physician and sanitarian will do well to prepare himself to recognize and deal with them. In the teaching of this subject the difficulty hitherto has been to recommend a textbook which would supplement the laboratory instruction by familiarizing the student with technical terms and furnishing satisfactory illustrations. The compact textbook of Max Braun has been the best

within reach for this purpose. Yet few medical students are capable of using textbooks in German or French. Hence the translation before us is very welcome although, unfortunately, the original price of the German edition has been more than doubled. Little need be said in praise of Braun's textbook as it is now a well-recognized aid in teaching this subject. The author has handled a difficult subject with skill, and the various editions have kept pace with the rapid growth of the subject.

Those concerned with the translation have been faithful to the original text and nomenclature and have placed their additions and emendations in brackets.

Inasmuch as this book appears for the first time before the English-speaking public it may not be amiss to outline briefly its contents. Beginning with the protozoa we find 127 pages devoted to them. To the flatworms (flukes and tapeworms) belong 134 pages. The round worms, those perhaps most frequent in our climate, are discussed in 84 pages. The remainder of the volume, about 100 pages, describes the most important ecto-parasites, such as ticks, itch-mites, lice, flies and mosquitoes, together with many rarer forms only occasionally encountered. Among the additions to the original text made by the English editors may be mentioned 5 pages on the recently discovered fluke, *Schistosomum japonicum*, with illustrations, a number of pages on various species of filaria and rather full accounts of ticks, their life-history and classification. The chapter on mosquitoes has also been considerably enlarged and illustrations of various parasite-carrying flies inserted.

The book may also be recommended as a valuable general guide to the physician, although the more careful study of any forms which he may undertake will demand larger works, such as those of Leuckart, Railliet, Blanchard and others.

Gefässkrisen. Von PROF. DR. J. PAL, k.k. Primararzt und Vorstand der I. medicin. Abteilung des k.k. Allgem. Krankenhauses in Wien. Illustrated. Leipzig: S. Hirzel. 1905.

In this volume of 275 pages Pal has brought together a large array of valuable facts from a special standpoint relating to certain symptoms on the part of the vascular apparatus. The design is not only to widen our view of the symptomatology of certain distressing and dangerous vascular conditions but also to pave the way for a rational prophylaxis. Considerable experimental work has been added to the clinical details. The general types of disturbance taken up are the vascular crises occurring in lead poisoning, in arteriosclerosis, in tabes and in certain affections of the kidneys and of the gall bladder. Preceding the clinical descriptions is an admirable systematic exposition of the general subject of what the author calls "Gefässkrise," and which he thinks may often be regarded as a separate affection. The book is a valuable addition to our knowledge of an important subject from an un-

usual standpoint, and is to be commended to the attention of all interested in the fundamental problems of internal medicine.

Adjuster's Manual. For the Settlement of Accident and Health Claims. By C. H. HARRBAUGH, M.D., Medical Director American Assurance Company, formerly Demonstrator of Syndes-mology in the Jefferson Medical College of Philadelphia, Examiner and Adjuster for Insurance Companies and Other Corporations, President Philadelphia Medical Examiners' Association. New York: The Spectator Company. 1905.

This is a small book mainly designed to make certain practical suggestions relating to the settlement of claims, and as such contains many facts of interest and of value to those engaged in this sort of work. The book naturally suffers from its brevity, and many of the questions discussed are hardly to be despatched satisfactorily in so small a compass. The book is attractively bound in flexible leather covers.

A Practical Treatise on Fractures and Dislocations. By LEWIS A. STIMSON, B.A., M.D., LL.D. (Yalen.), Professor of Surgery in Cornell University Medical College, New York; Surgeon to the New York and Hudson Street Hospitals; Consulting Surgeon to Bellevue, St. John's, and Christ Hospitals; Corresponding Member of the Société de Chirurgie of Paris. Fourth edition, revised and enlarged. With 331 illustrations and 46 plates in monotint. New York and Philadelphia: Lea Brothers & Co. 1905.

Dr. Stimson's "Treatise on Fractures and Dislocations" has become a standard work. The previous edition was published five years ago, and this last edition (fourth) has a great deal of new and valuable information. The knowledge gained by the use of the x-ray in fractures near joints and the so-termed "open" treatment of fractures are thoroughly presented.

The writer's position in reference to the operative treatment of fractures is conservative, and while he considers that operations may be done in the treatment of fractures, yet he by no means advises their indiscriminate application.

The operative treatment of old dislocations is considered at length. Many new illustrations have been added and many of the time-honored ones have been retained.

The valuable material of the Hudson Street Hospital (House of Relief) has furnished a large number of cases that have come directly under the observation of the author. In the period from 1894 to 1903 over 12,000 fractures and over 1,000 dislocations were treated at this hospital.

Dr. Stimson's book stands forth prominently as one which contains authentic material, carefully collected and thoroughly analyzed. New information is continually being obtained regarding fractures and dislocations, and it will be a relatively short time before a new edition will be necessary.

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A CONGRESS ON QUACKERY.

THE multiplication of congresses seems to go on steadily. One of the latest which has been called to our attention is a Congress on Quackery which has recently met in Paris for the purpose of discussing illegitimate methods of medical practice and of repressing charlatanism. The papers read at this meeting no doubt brought out many facts not hitherto generally known. The ingenuity of the fraudulent practitioner was amply demonstrated and a vast number of more or less illegitimate methods of practice were brought to light. It appears that sorcery yet flourishes in France. Miracles as we know, are still performed, there are also bone setters and others who claim special virtue for some ointment or herb. In fact, quackery flourishes in its diversified forms in France as elsewhere in the world, and we imagine it will continue to flourish so long as men find inevitable disappointment in the regular practice of medicine and the claims of false systems are sufficiently advertised. The secret which lies at the basis of the multitudinous quack systems is on the one hand human gullibility and the inherent desire for life and health, together with our fundamental lack of knowledge of the healing of many diseases. It is altogether natural that a man ignorant of the limitations of medical knowledge should try any system when his life is at stake if the legitimate practice of medicine fails in its efforts at cure. It is a pitiable fact but one none the less to be reckoned with, that freedom of choice in matters of personal health except as detrimental to the body politic cannot be interfered with by legislative

enactment. Experience has unquestionably shown that increasing intelligence on the part of the people at large is its only safeguard against the systems of quackery which, without such legislation, they are only too willing to adopt if it offers even a vague hope of relief from their sufferings. The campaign which must be waged by the regular practice of medicine is not one of restrictive legislation, except in flagrant cases, but rather of unceasing effort toward the education of the public, that the great mass of useful knowledge regarding medical matters may be found within the ranks of the regular medical profession, and that, however striking individual so-called cures may appear, they are explainable on principles well understood by legitimate practitioners. Although it is somewhat appalling to see what a mass of fraudulent practice and gross superstition was brought to the surface at this French congress, we are none the less optimistic enough to believe that quackery is, on the whole, diminishing and that intelligence among the people regarding medical matters is increasing. There is considerable evidence to show that, as the people at large become better acquainted with disease and its mystery is lessened through legitimate publicity, a change will be noticeable toward the fraudulent methods which now flourish in our midst. Education in a broad sense can alone bring this result to pass, and, although we have small confidence that charlatanism can be ultimately repressed by any other means, we can certainly see in the work of this French congress another step in the work of freeing the popular mind of those superstitions and false hopes which must always in the long run result to their detriment.

COOPERATION IN PREVENTION AND CONTROL OF TUBERCULOSIS

Few movements in preventive medicine have recently made such rapid and wide-spread progress as that relating to the prevention and control of tuberculosis. The professional and lay minds have been aroused alike to a degree bordering upon enthusiasm. That erroneous ideas should be formed relative to many of the questions involved was inevitable. The danger from such errors became all the greater on account of the fact that in many localities lay organizations have undertaken the work independent of medical advice or supervision. For this reason the recent action of the district committees of the Massachusetts Medical Society in organizing for

co-operative work for the prevention and control of tuberculosis is most important. The retiring president of the Massachusetts Medical Society, Dr. Arthur T. Cabot, in his visits to the various district societies, pointed out how effective action might be taken, with the result that each district appointed a committee to consider the question in its various phases. These committees met Tuesday, June 12, at the new buildings of the Harvard Medical School and organized a state association. Dr. Arthur T. Cabot was elected president and Dr. Thomas F. Harrington, of Lowell, secretary. The chairmen of the various district committees with the above officers are to constitute an executive committee. Each district is to report upon the conditions within its borders, and from these reports it is hoped to present a clear and comprehensive view of conditions prevailing throughout the state. Such a report will be invaluable as well as authoritative in directing the energies of those individuals or societies undertaking this line of work. We know of no other state organized along these lines and we congratulate the state society and its officers.

MEDICAL NOTES.

PLAGUE IN INDIA. — Deaths from plague in India for the week ending April 28 are said to have been 1,700 with a total of over 20,000 cases.

CANCER RESEARCH. — An international conference on the subject of cancer, it is announced, will be held at Heidelberg from Sept. 24 to 27, in connection with the opening of the institute for cancer research.

A CENTENARIAN. — The death is announced of Fanny Lomax in Washington, at the reputed age of over one hundred and five years. She was formerly a slave, and it is said that her age is authenticated through the family Bible belonging to the family of her former master. Born in 1801, she lived in the administrations of every president excepting the first.

BENEFICIARIES OF THE CARNEGIE FUND FOUNDATION. — Last April Mr. Carnegie gave \$10,000,000 in steel corporation bonds, the income of which was to provide retirement allowances for teachers in the universities, colleges and technical schools of the United States, Canada and Newfoundland. The available income, about \$70,000, is to be distributed this year to approximately fifty persons. Among these are distinguished

men from Columbia, New York University, Cornell, Princeton, Western Reserve, Yale, Lafayette and Harvard.

AMERICAN INSTITUTE FOR SCIENTIFIC RESEARCH. — As an outgrowth of the Society for Psychical Research a new organization has been perfected to be known as the American Institute for Scientific Research. This organization has been granted a perpetual charter by the state of New York. The object of the institute will be to organize investigations in abnormal psychology and to extend knowledge of this branch along scientific lines. Prof. James H. Hyslop has been appointed secretary, and among the Board of Trustees occurs the name of Dr. James J. Putnam, of Boston.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, June 20, 1906, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 36, scarlatina 34, typhoid fever 10, measles 56, tuberculosis 38, smallpox 0.

The death-rate of the reported deaths for the week ending June 20, 1906, was 14.19.

BOSTON MORTALITY STATISTICS. — The total number of deaths reported to the Board of Health for the week ending Saturday, June 16, 1906, was 190, against 185 the corresponding week of last year, showing an increase of 5 deaths and making the death-rate for the week 16.65. Of this number 94 were males and 96 were females; 184 were white and 6 colored; 130 were born in the United States, 55 in foreign countries and 5 unknown; 50 were of American parentage, 117 of foreign parentage and 23 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 35 cases and 4 deaths; scarlatina, 17 cases and 1 death; typhoid fever, 15 cases and 1 death; measles, 58 cases and 1 death; tuberculosis, 40 cases and 19 deaths; smallpox, no cases and no deaths. The deaths from pneumonia were 23, whooping cough 3, heart disease 23, bronchitis 5 and marasmus 6. There were 17 deaths from violent causes. The number of children who died under one year was 37; the number under five years 56. The number of persons who died over sixty years of age was 34. The deaths in public institutions were 82.

There were 4 cases and 2 deaths reported from cerebrospinal meningitis during the week.

A CENTENARIAN. — The death of Mrs. Jane Mansfield, of Lynn, is announced at the reputed age of one hundred and five years.

PRESIDENT OF THE MASSACHUSETTS MEDICAL SOCIETY. — Dr. George W. Gay, of Boston, has been elected president of the Massachusetts Medical Society for the ensuing year. This is a worthy recognition of Dr. Gay's long service to medicine in this state.

BEQUESTS TO HOSPITALS. — By the will of the late Miss Ella A. Bartlett, of Kingston, the Hale Hospital of Haverhill receives \$5,000 for the benefit of Kingston patients, and the Cottage Hospital of Exeter \$3,000 for the benefit of East Kingston patients.

DEFEAT OF BILL IN RELATION TO FREE HOME FOR CONSUMPTIVES. — After much effort had been made in its behalf the bill before the legislature to pay from the state treasury ten thousand dollars to the Free Home for Consumptives in Boston has been defeated. It is rare that a bill has been so vigorously pushed as this, and it is certainly a source of satisfaction that in spite of all efforts in its behalf it has not been allowed to pass. The principle involved in such a bill is a dangerous one, committing the state, as it would have done, to the support of a purely private enterprise. Without reflecting in the least on the enterprise which the Free Home is undertaking, it is evident that as a private institution it should be maintained by private funds and not, even in part, by the state.

APPOINTMENT OF DR. GEORGE BLUMER. — Dr. George Blumer has been appointed to the Chair of the Theory and Practice of Medicine in Yale University to succeed the late Dr. John S. Ely. Dr. Blumer was formerly a director of the Bender laboratory at Albany, and Professor of Pathology at the Albany Medical College, and until recently connected with the Medical Department of the University of California.

HOSPITAL FOR CRIPPLED CHILDREN. — A hospital for crippled children is projected to be located on the north end of Prudence Island in Narragansett Bay. This has been made possible through the liberality of Mr. James A. Garland, of New York. The hospital is intended for children who cannot be properly taken care of at home and for those sent to the Rhode Island Hospital in Providence who could be more effectually treated away from the city.

NEW YORK.

BEQUESTS. — Among the charitable bequests in the will of the late Mrs. Catharine L. R. Catlin, of New York, are \$5,000 to the New York Hospital and \$4,000 to St. Luke's Home.

ISABELLA McCOSH INFIRMARY. — Among the gifts announced at the commencement of Princeton University, was the sum of \$31,000 raised by the Ladies' Auxiliary toward the endowment of the Isabella McCosh Infirmary.

APPOINTMENT OF DR. A. B. LAMP. — On June 8, Dr. Arthur Becket Lamp, who has been filling the chair of Dr. Richards at Harvard during the absence of the latter in Europe, was appointed director of the Havenmeyer Laboratory of Chemistry, New York University, to succeed Dr. Morris Loeb.

DR. W. F. HORNADY HONORED. — At the one hundred and nineteenth annual commencement of the Western University of Pennsylvania held June 12, the degree of Doctor of Science was conferred on Dr. W. F. Hornady, the director of the New York Zoological Park.

GIFT TO VASSAR COLLEGE. — At the commencement of Vassar College, Poughkeepsie, on June 13, it was announced that Dr. Henry M. Saunders, of New York, a member of the board of trustees, had made a gift to the college of \$75,000 for the erection of a building, as yet undesignated, as a memorial to his wife.

CORNELL UNIVERSITY MEDICAL COLLEGE. — At the annual commencement of Cornell University Medical College, held June 13, there were fifty-eight graduates, six of them women. The vice-president of the class was Toyohiko Takamizawa, son of a prominent Japanese official.

YEARLY FINANCIAL REPORTS OF HOSPITALS. — The superintendents of the New York, St. Luke's, Roosevelt and Presbyterian hospitals have decided to adopt and recommend a uniform system of yearly financial reports and statistics for the benefit of their patrons. This, it is stated, is in response to criticism of hospital management and a falling off in contributions to these institutions.

DEGREES AT COLUMBIA UNIVERSITY. — At the annual commencement of Columbia University, held June 13, 1110 degrees were conferred. Among the honorary degrees, that of Doctor of Science was conferred on Daniel Grand Elliot, Curator of Zoology, Field Columbian Museum,

Chicago, Ill., and Baron Kanehiro Takaki, M.D., F.R.C.S., Surgeon General (Reserve) of the Japanese Navy. In the medical department (The College of Physicians and Surgeons) fellowships of the Alumni Association, value \$500 each, were awarded to Oliver Smith Strong, Ph.D., for research work in pathology and Herman von W. Schulte, M.D., for research work in anatomy. The Alonzo Clark scholarship, to promote the discovery of new facts in medical science, annual value about \$600, was awarded to A. B. Wadsworth, M.D.

Miscellaneous.

COUNCILLORS' MEETING.

THE annual meeting of the Councillors of the Massachusetts Medical Society was held in the Medical Library, Boston, on Tuesday, June 12, 1906, at 5 P.M. One hundred and forty-three councillors were present.

The secretary reported that 283 Fellows had been added to the society since the last annual meeting, and that 41 deaths had been recorded.

The treasurer, Dr. Buckingham, reported that the receipts of the society, including the balance of \$11,199.05 a year ago, had been \$27,178.96; the expenditures \$15,544.37, leaving a balance on hand of 11,634.59.

In accordance with the recommendation of the Committee on Membership and Finance, it was voted that \$4,500 of the surplus in the treasury be distributed among the district societies.

Dr. G. G. Sears, for the Committee on State and National Legislation, reported that during the present session of the legislature they have appeared, either personally or by representatives, before the committees of the state legislature in favor of the following bills:

To regulate the height of buildings outside of the city of Boston.

To provide for the better care of the health of pupils in the public schools.

To regulate the sale of patent, proprietary and other medicines containing poisonous drugs.

To regulate the sale of adulterated foods and drugs.

According to the last bulletin issued by the legislature the only one of these bills which has been enacted is that regulating the sale of adulterated foods and drugs.

The others have passed one branch of the legislature, but have not been reached in the other. We have not succeeded in all cases in obtaining as stringent legislation as was desired.

Opposition to the bill to prohibit vivisection was left in the hands of Dr. H. C. Ernst. The bill was defeated in committee. The hardest work done by the committee was in opposing a bill to establish a state board of examination and registration in osteopathy. It was finally

defeated in the legislature as a result largely of the work done by the auxiliary Legislative Committee of the Massachusetts Medical Society.

The committee believes that the Auxiliary Legislative Committee is of great use in directing popular opinion and in bringing proper pressure to bear upon the members of the Legislature; and that a larger committee, in which each senatorial district shall be represented by a member, would be a more useful body than the present one in which each district of the society is represented.

The report of the committee was accepted.

In accordance with the report of the Committee on Nominations the following were elected for the offices of the society for the ensuing year:

President, Dr. G. W. Gay, of Newton; vice-president, Dr. Leonard Wheeler, of Worcester; corresponding secretary, Dr. C. W. Swan, of Lowell; recording secretary, Dr. F. W. Goss, of Roxbury; treasurer, Dr. E. M. Buckingham, of Boston; librarian, Dr. E. H. Brigham, of Brookline.

Dr. J. F. A. Adams, of Pittsfield, was chosen orator for the annual meeting of the society in 1907.

The following standing committees were appointed:

Of Arrangements: A. P. Perry, G. S. C. Badger, Lincoln Davis, L. W. Gilbert, C. C. Simmons, G. H. Francis. On Publications: O. F. Wadsworth, G. B. Shattuck, H. L. Burrell. On Membership and Finance: C. M. Green, F. W. Goss, Walter Ela, A. Coolidge, Jr., H. A. Wood. To Procure Scientific Papers: R. C. Larrabee, J. B. Blake, B. P. Croft, M. D. Clarke, Charles Harrington. On Ethics and Discipline: C. G. Carleton, Leonard Wheeler, Edward Cowles, J. F. A. Adams, J. A. Gage. On Medical Diplomas: H. E. Marion, O. F. Rogers, H. W. Newhall. On State and National Legislation: G. W. Gay, G. G. Sears, H. P. Bowditch, S. D. Presbrey, D. D. Gilbert.

The resignation of Dr. C. W. Swan, as corresponding secretary, was accepted.

Dr. Cheever spoke of the prolonged service of Dr. Swan as an officer of the society, and moved that the sincere thanks and sympathy of the councillors be presented to Dr. Swan. Adopted unanimously.

The recording secretary, Dr. Goss, was elected also as corresponding secretary for the ensuing year.

Dr. F. C. Shattuck, for the committee appointed at the last meeting of the councillors, to consider and report on the advisability of such changes in the By-Laws as may bring them into conformity with present-day practice, reported, recommending the following changes:

1. In By-Law 1, line 9, omit "and surgical." Omit lines 9 to 13 inclusive, "and" — "years." In line 16 substitute "treat" for "cure."

In lines 16 and 17 omit "Spiritualism, homeopathy, allopathy, Thomsonianism, Eclecticism or" — and "other"; omit "irregular or."

If the proposed changes in By-Law 1 are adopted, the amended By-Law would read:

"Candidates for admission into the Massachusetts Medical Society may be either male or female; and every candidate must by examination, as hereinafter provided, satisfy the Censors of the Society that he is not less than twenty-one years of age; that he is of sound mind and good moral character; that he has a good general English education; that he has a knowledge of the principles of experimental philosophy; that he has such an acquaintance with the Latin language as is necessary for a good medical education; that he has studied medicine at an authorized medical school, recognized by the Councilors of the Society, and has received a diploma from such school; that he does not profess to treat diseases by, nor intend to practise, any exclusive system, generally recognized as such by the profession or declared so by the Councilors of the Society; and that he possesses such other qualifications as the Society may deem necessary."

II. Omit By-Law IX, *in toto*.

III. Change By-Law X so as to read:

"Any Fellow of this Society who advertises for sale, or otherwise offers to the public, any medicine the composition of which he keeps secret, or who offers to treat any disease by any such secret medicine, or by any secret treatment, shall be liable to expulsion, or to such other penalty as the Board of Trial may have power to inflict."

Dr. Cheever moved to amend the Committee's report by inserting in By-Law I, line 16, after the word "practise," the words, "or to assume the name of" so that the clause would read "that he does not profess to treat diseases by, nor intend to practise, or to assume the name of, any exclusive system," etc.

Discussion, but no action, followed the offering of these resolutions and they were reserved in accordance with the By-Laws, for presentation to the Society on the next day.

[At the meeting of the Society on June 13, after an animated discussion participated in by Drs. F. C. Shattuck, Cheever, Folsom, Harvey, Whentley, Lambert and F. B. Harrington, the amendment proposed by Dr. Cheever was not adopted, and the amendments offered by the Committee were passed.]

Correspondence.

THE HOUSE OF DELEGATES, AMERICAN MEDICAL ASSOCIATION.

Boston, June 14, 1906.

Mr. Editor.—To those who remember the methods of transacting the business of the American Medical Association in vague forty years ago the plan in use at the present time, as exemplified at the recent meeting in this city, possesses no little interest. Formerly too much of the valuable time of the Association was frittered away in useless discussion, which not infrequently resulted in proceedings that were anything but dignified or worthy of any medical association.

In these later years all of that has been changed for the better, and the business of the Association is transacted

in a body especially designed for that purpose, the House of Delegates. The necessity for a comparatively small working body will be apparent when one remembers that this Association has nearly 24,000 active members, and that through its constituent associations it is affiliated with about 60,000 physicians. The circulation of its *Journal* last year reached nearly 10,000 copies.

The House of Delegates is composed of delegates from the constituent associations or state medical societies, from the scientific sections of the American Medical Association, from the army and navy departments, and from the United States Public Health and Marine-Hospital Service.

Each state society is entitled to send one delegate for every 500 active members or fraction thereof. New York heads the list with 13 delegates, all of whom were present at this meeting. Illinois comes next with 8 members, 7 present. Pennsylvania has 7, and all were registered. Massachusetts stands fourth on the list with 6 delegates, and all were in attendance. The total number of delegates registered at this meeting was 123. The number is limited to 150. A committee of apportionment is appointed every third year, this being the triennial year, to decide as to the number of delegates each state is entitled to send.

The delegates are appointed by the president of the state associations, and confirmed by the council (in Massachusetts). Members of not less than two years' standing are eligible, and are appointed for two years.

The House of Delegates elects all the general officers of the Association, the president, four vice-presidents, general secretary and treasurer. It also elects the nine trustees, three each year for terms of three years each. The officers are elected annually and hold office one year, or until their successors are chosen and installed. With one exception the officers are nominated orally in open meeting of the House of Delegates, but the nominating speech must not exceed two minutes. The general secretary is nominated by the Board of Trustees. The election of the general officers is by ballot, and takes place on the afternoon of the third day of the annual meeting.

The importance of the position of delegate will be apparent when it is remembered that the major portion of the business of this great representative association, one of the largest in our profession in the world, is transacted by this body. The financial affairs are in the hands of the trustees, who must be members of the House of Delegates, but they have no vote.

It is especially essential that only men of sound business ability and of a considerable experience, who can and will give their time and attention to the work, should be sent to the House of Delegates. They can give little time to the sections or to anything else while the House is in session. The meetings of the delegates begin the day previous to the general meetings, and usually occupy a good portion of four days.

Probably as little time was wasted and as few personalities were indulged in at the late meeting as can be expected in assemblies of this character. As a rule the work was done harmoniously and with reasonable expedition.

One of the more important acts of this House of Delegates was the adoption of an amendment to the By-Laws placing the arrangements for the annual meetings in the hands of the trustees instead of in charge of a committee of arrangements, as heretofore. It is to be hoped that hereafter by this action the Association will assume the running expenses of the meetings, as the rent of halls, clerk hire, printing, etc., instead of requiring the local profession to bear that expense. The attendance has grown so large in recent years that in some places the expense has been prohibitory of meetings.

The ordinary expenses of the annual meeting now amount to several thousand dollars and are constantly increasing. For this reason, if for no other, it would seem only just and reasonable for them to be assumed by the Association. The same profession will find plenty of ways of disposing of money in the various entertainments that have come to form a part of the annual meetings. The Association has a good property, a handsome surplus, and the financial officers seem to have been admirably managed. It is worthy of the cordial support of the entire profession of the country.

Very truly yours,

GEORGE W. GRAY, M.D.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, MAY 26, 1906.

| CITIES. | Reported deaths in each. | Deaths under five years. | CITIES. | Reported deaths in each. | Deaths under five years. |
|---------------------------|--------------------------|--------------------------|-----------------------|--------------------------|--------------------------|
| New York | 1,480 | 459 | Quincy | 6 | 1 |
| Chicago | 780 | 109 | Waltham | 12 | 2 |
| Philadelphia | 519 | 144 | Pittsfield | 9 | 1 |
| St. Louis | — | — | Gloucester | 6 | 1 |
| Baltimore | 193 | 50 | Brookline | 6 | 1 |
| Cleveland | — | — | North Adams | 4 | 0 |
| Buffalo | — | — | Chicopee | 10 | 5 |
| Pittsburg | — | — | Northampton | 7 | 0 |
| Charlottesville | — | — | Medford | 4 | 1 |
| Milwaukee | — | — | Beverly | 6 | 1 |
| Washington | — | — | Hyde Park | 2 | 1 |
| Providence | 12 | 23 | Newburyport | 9 | 1 |
| Boston | 214 | 130 | Leominster | 1 | 1 |
| Worcester | 26 | 10 | Melrose | 3 | 0 |
| Fall River | 34 | 14 | Woburn | 3 | 1 |
| Cambridge | 31 | 9 | Marlborough | 1 | 0 |
| Lowell | 35 | 10 | Westfield | 3 | 1 |
| Lynn | 20 | 6 | Peabody | 1 | — |
| New Bedford | 28 | 9 | Revere | 1 | — |
| Springfield | 24 | 1 | Clinton | 1 | 0 |
| Lawrence | — | — | Attleboro | 1 | 0 |
| Somerville | 16 | 5 | Attleboro | 5 | 1 |
| Holyoke | 12 | 5 | Garfield | 1 | — |
| Brookton | 12 | 4 | Milford | — | — |
| Malden | 8 | 1 | Southbridge | 4 | 1 |
| Salem | 16 | 8 | Weymouth | 4 | 1 |
| Chelsea | 14 | 4 | Framingham | 2 | — |
| Haverhill | 14 | 6 | Watertown | 4 | 1 |
| Newton | 5 | 1 | Plymouth | 1 | 3 |
| Fitchburg | 8 | 3 | Southbridge | 1 | 1 |
| Taunton | 11 | 3 | Wakefield | 1 | — |
| Everett | 1 | — | Webster | — | — |

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING JUNE 6, 1906.

IRWIN FAIRFAX, surgeon. Granted leave of absence for one month and twenty-five days from July 9, 1906. June 6, 1906.

CARRINGTON, P. M., surgeon. Granted leave of absence for three days from June 4, 1906, under paragraph 189 of the regulations.

WILLIAMS, L. L., surgeon. Granted leave of absence for one month and fifteen days beginning July 16, 1906. June 6, 1906.

McINTOSH, W. P., surgeon. Granted extension of leave of absence for three days from June 4, 1906. June 1, 1906.

WERTENBAKER, C. P., surgeon. Granted leave of absence for nine days from June 5, 1906. June 2, 1906.

ROSENAT, M. J., passed assistant surgeon. Granted leave of absence for one day, June 1, 1906, under paragraph 189 of the regulations.

NYDEGGER, J. A., passed assistant surgeon. Granted leave of absence for three months from Aug. 10, 1906, with permission to go beyond sea. June 5, 1906.

WICKES, H. W., passed assistant surgeon. Granted leave of absence for two days from June 5, 1906. June 2, 1906.

WICKES, H. W., passed assistant surgeon. Granted extension of leave of absence for three days from June 7, 1906. June 6, 1906.

MOORE, DUNLOP, passed assistant surgeon. Granted leave of absence for two months from May 7, 1906. May 29, 1906.

WILSON, R. L., passed assistant surgeon. Granted leave of absence for seven days from May 28, 1906, under paragraph 191 of the regulations.

WILSON, R. L., passed assistant surgeon. Granted extension of leave of absence for seven days from June 4, 1906. June 2, 1906.

STIMSON, A. M., assistant surgeon. Granted leave of absence for seven days from May 25, 1906, under paragraph 191 of the regulations.

RYCKER, W. C., assistant surgeon. Granted leave of absence for three days from June 5, 1906. June 1, 1906.

HUNT, REID, chief, Division of Pharmacology. Detailed to attend the meeting of the American Medical Association at Boston, Mass., June 4-8, 1906. June 2, 1906.

KASTLE, J. H., chief, Division of Chemistry. Granted leave of absence for eleven days beginning June 12, 1906. June 2, 1906.

ABDIS, W. E., acting assistant surgeon. Granted leave of absence for twenty-six days from June 4, 1906. June 2, 1906.

GRAY, R. H., acting assistant surgeon. Granted leave of absence for thirty days from June 16, 1906, and excused from duty without pay for sixteen days from expiration of above leave. June 2, 1906.

GREGORY, GEORGE A., acting assistant surgeon. Granted leave of absence for seven days from June 4, 1906. June 1, 1906.

HALLET, E. B., acting assistant surgeon. Granted leave of absence for two days from June 2, 1906. June 2, 1906.

JAMES, WILLIAM F., acting assistant surgeon. Granted leave of absence for thirty days from Aug. 1, 1906, and excused for fifteen days without pay from date of expiration of above mentioned leave. June 2, 1906.

NUTE, A. J., acting assistant surgeon. Granted three days' leave of absence under paragraph 210 of the regulations.

SAPFORD, V. G., acting assistant surgeon. Granted leave of absence for three days under paragraph 210 of the regulations.

SIMONSON, G. T., acting assistant surgeon. Granted leave of absence for two days from June 5, 1906. June 4, 1906.

STEVENSON, J. W., acting assistant surgeon. Granted leave of absence for thirty days from June 11, 1906, and excused without pay for period of two months so much thereof as may be necessary, from expiration of leave of absence. June 6, 1906.

GOODMAN, F. S., pharmacist. Granted leave of absence for sixteen days from June 18, 1906. May 31, 1906.

RICHARDSON, S. W., pharmacist. Granted leave of absence for ten days from June 3, 1906. June 2, 1906.

VAN NESS, G. J., pharmacist. Relieved from duty in the Bureau and assigned to temporary duty in Purveying Depot, Washington, D. C. May 31, 1906.

APPOINTMENTS.

LOUIS SCHWARTZ, GEORGE C. BALLARD and ELSWORTH WILSON appointed acting assistant surgeons for provisional periods of six months from date of oath.

RECENT DEATHS.

DR. ANDREW D. BLANCHARD, said to have been the oldest surviving surgeon of the Civil War, died last week in Melrose at the age of eighty-three. He was born in Medford, graduated at Harvard College in 1842 and at the Harvard Medical School in 1846. During the Civil War he served at Fortress Monroe.

DR. HENRY A. CARRINGTON died in Bristol, Conn., June 9, at the age of eighty. He was a graduate of the Harvard Medical School and for many years practised in the central portion of New York State. Later he removed to New Haven and afterwards to Bristol where he died.

DR. DONALD McLEAN BARSTOW, of New York, died suddenly at Portland, Me., on June 9, in the fortieth year of his age. He was the son of Dr. Josiah Whitney Barstow, who for many years conducted Sanford Hall at Flushing, Long Island, one of the best known private institutions for the insane in this country. He was graduated from the College of Physicians and Surgeons, New York, in 1892, and at the time of his death was clinical assistant in otology at Cornell University Medical College.

DR. EDWIN T. JONES, of Queens, Borough of Queens, New York, died suddenly of apoplexy, on June 10, at Uteka, N. Y., where he had stopped while on his way to Saratoga Lake to visit a son suffering from tuberculosis. He was graduated from the medical department of the University of the City of New York in 1883, and at the time of his death was chief of staff of the Jamaica (Long Island) Hospital.

DR. GILBERT L. GIFFORD, the oldest practising physician in Hamilton, Madison Co., N. Y., died suddenly, from cardiac disease, on June 11.

APPOINTMENTS.

DR. ALGERNON COOLIDGE, JR., has been appointed assistant professor of laryngology at the Harvard Medical School.

DR. F. T. LEWIS has been appointed assistant professor of embryology at the Harvard Medical School.

DR. J. L. BRUMER has been appointed demonstrator in histology at the Harvard Medical School.

PROF. PIERRE JANET, of Paris, has been appointed lecturer at the Harvard Medical School for the ensuing year, on the general subject of hysteria.

Address.

THE NATURE AND PROGRESS OF MALIGNANT DISEASE.

ORATION ON SURGERY AT THE FIFTY-SEVENTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, BOSTON, JUNE 5, 8, 1906.

BY JOSEPH D. BRYANT, M.D., NEW YORK CITY.

My first words are words of thanks, profound and sincere thanks, addressed to my colleagues of the American Medical Association because of my estimation of the high honor conferred in inviting me to address you on this occasion. My first desire, the dominating desire of earnest appreciation, is that I may say something that will justify the choice of my colleagues and my presence before you. My first hope, the fond hope which I most cherish at this time, is that someone who may be influenced by what I shall say will gain in comfort and life thereby; for, be the gain but little, even then those who are accessory to my presence may claim acquittal because of it.

Since it may not be known to all here present, I am prompted to say at once that sometime during the course of the meeting of this association, an address, denominated "An Oration on Surgery," is a part of the scientific proceedings. In this instance it is not my intention to attempt a review of the whole field of surgery, nor even of a year's experience, but, instead, to devote the brief time given me to the consideration of a surgical topic which to-day is engrossing more of the time and energy of scientific medical endeavor than is any other subject in the entire range of surgery. Hence the topic of the evening, "The Nature and Progress of Malignant Disease."

It seems not unfitting in a city whose early resistance to the oppressive encroachments on human liberty awakened the demand for American freedom that an earnest warning should be voiced against the advancing encroachments on human comfort and life of a malignant disease which obviously afflicts with dire results all classes of vertebrate beings. The expression malignant disease is used here in the general sense, just as later the term cancer will be employed. It is better thus than to attempt to speak of the varieties of malignant disease, since only a general idea of their nature and progress can be considered in the comparatively short time allotted for the purpose.

Cancer is a general and not a local variety of disease. The field of its activity is quite as extensive as is the world itself. The vertebrate order of creatures is more or less afflicted with cancer throughout the entire classified series. The highest vertebrate orders of life suffer from cancer more than do the other orders combined. The civilized and the domesticated classes of higher rank suffer more from the storm of affliction than do those of lower rank or of the natural state. Mankind everywhere pays distinctive vital tribute to this disease, not, however, in

equal proportions, but in accordance with the standard of the civilization of which he is a part. The higher the standard the greater is the contribution to malignant fate; the humbler and more natural the standard the less onerous is the demand. The rulers of mighty nations and the humblest human factors of savage existence, each in their respective ratios, succumb to the mysterious lethal influences of cancer. Also fish and flesh, staple articles of food of man, each, in a varying measure, is the abode of malignant action, and more especially is the latter class thus afflicted. The fish of pure streams and ponds and those of salty habitations are in no small degree the subjects of cancer. The genteel trout and the beneficent cod are examples of this fact, respectively. Even the invertebrate oyster in one instance is widely reported to have yielded to malignant change.

The myriads of oysters subject to the scrutiny of hosts of gustatory and scientific observers for many years, with apparently but one reported instance of malignant disease under all of these circumstances, suggested to us the idea of reviewing the facts in this particular case. A careful examination was made, therefore, of the acknowledged record¹ of the case the recital of the chief points of which merits your indulgence at this time. It appears that the late Professor Leidy, the famous anatomist of Philadelphia, came into possession of an oyster having a large tumor of the soft parts which he presented to the late Professor Ryder in January, 1887. In commenting on the growth at that time Professor Ryder spoke as follows: "The tumor seems to have been benign in character as the oyster in other respects appears to be healthy." A description of the tumor of quite minute and apparently of microscopic kind is reported along with the above statement which is now regarded by competent authority² as being congenital, thus sustaining the belief in benignity expressed by Professor Ryder at the outset.

I consider it proper to enter thus fully into the merits of this specimen, since, for some reason, it has been regarded as the first and perhaps the only proof of malignant invasion of invertebrate life. We will now return to the main channel of the discourse.

The flesh of cows and oxen is the seat of a tumor in the unsuspected proportion of 2 per 1,000, as is revealed by the careful inspection of their slaughtered products. The young animals, however, of divers kind, and of various ages, suffer under these circumstances.

Advanced age, both in the comparative vertebrate and in the invertebrate, is a factor which increases the probability of malignant progress, especially in mammals. Red age is evidenced by many years, and comparative age is ascertained by fewer, each stage inviting the progression of cancer. And, too, it is a fact that in a bulk of the age group, mortality is noted in those who are old, it is ended, who die young of infection, cancer is absent.

¹Proc. U. S. Nat. Mus., (N. S.), vol. 11, p. 104, 1888.

²Dr. J. K. Dunbar and H. W. B. Peck.

³Emp. & Cancer Research, p. 100, 1905.

become the frequent prey of cancer, while other contiguous tissues endowed with later function and those of the body at large remain in a healthy and useful state. In this connection it may be said that youth and youthful tissues comparatively seldom hold communion with cancer.

For a long time the solution of the problem of malignant disease has been uppermost in the minds of many of the best students of pathologic phenomena in the medical world. During the last few years the efforts directed to the solution of the mystery of malignancy, stimulated by the thought of the possible parasitic nature of the disease and the apparent increase in its extent and activity, have been markedly extended through the logical efforts of special commissions established for the purpose. Commissions organized under the patronage of crowned heads and public dignitaries of exalted station, and conducted by medical and lay minds of superlative attainment, supplemented by unlimited opportunity and ample financial support, are searching the animal world in the effort to shed light, beneficent light, on the mystery of cancer. In England and Germany especially, the resources of the governments and the sympathetic support of the king and the emperor, respectively, are directed to the benevolent purpose of determining the origin and the true nature of malignant disease. Also in this country notable institutions of learning are patiently engaged in the efforts to accomplish the same purpose. Individuals of eminent attainment are of themselves fighting in the battle along lines of their own selection with the same object in mind. Laymen of munificent means, prompted by humane motives or perhaps by personal dread, offer bountiful endowments for the discovery of the nature and the cure of cancer. The thoughts and efforts of the civilized world, as represented in scientific medical attainment and benevolent endeavor, are to-day mainly centered on securing the control of tuberculosis and on determining the true nature and the cure of malignant disease.

It is proper to say, I believe, that the widely separated instances of cancerous affliction as noted between the civilized and barbarous peoples, between the dwellers in the flesh and salt media, and between the lower classes of mammals seem to indicate forcibly that the circumstances of human life in the civilized state have not given origin to cancer, although they may have added much, indeed, to its frequency.

That cancer is a distressing part of the history of the animal kingdom cannot be gainsaid. And, unfortunately, the more comprehensively and critically the investigations relating to it are carried forward the more widespread it appears to be. As already expressed, mankind in the civilized and also in the undeveloped condition suffers from cancer, and it is probable that no race or condition of the human family is entirely exempted from this affliction. Also no organ or tissue of the human body is entirely free from its visitation. The dumb companions of man are similarly afflicted, but in a less degree, and it is

altogether probable that as the search progresses along the various lines of animal existence malignant manifestation will appear now and again, reminding us, perhaps, that the penalty of the violation of a universal law of development of organized beings is relatively promptly enforced on the object or on the part concerned in the offense.

In this connection it is not amiss to heed the fact that experimentally and practically the transmission of cancer from man to animals or from one animal to another of different species has not yet been successfully witnessed beyond gamsay, notwithstanding the repeated attempts to attain the purpose and the results of long critical observation. On the contrary, the apparent transmission of cancer between animals of like species and its unquestionable extension by metastasis in those already afflicted is of common knowledge.

The vegetable kingdom suffers at times and in isolated places from a form of local progressive disease apparently akin in nature to the malignant characteristics of the animal economy. In fact, the realization that these peculiar vegetable afflictions were caused by a parasite in many instances prompted the renewed suggestion on the part of Hutchinson that similar appearing growths of human origin might later be found to depend on the presence of parasites. Since that time, more especially during the last fifteen years, the contention in this respect between the supporters of the parasitic and non-parasitic ideas regarding this disease has been continuous and spirited, and as yet without a generally satisfactory conclusion.

It is no part of the purpose of this address to discuss the various theories relating to the nature of the inherent cell activity characteristic of cancer, or of any other form of malignancy. To the members of the medical profession here present such a course would necessarily be inconclusive and disappointing. To those of the lay order whose feeble hold on technical expressions would present unsurmountable difficulties of appreciation the result would be the same. Moreover, the chief aim of this discourse would be missing and, besides, as is expressed in a well-known play:

"The result is a very pretty quarrel as it stands;
We should only spoil it by trying to explain it."

The period at which this contention will be ended is too uncertain to merit other than hopeful anticipation, and too important to be neglected in any respect in opposing malignant advance.

The time when malignant disease first appeared in the path of human existence and added its insatiate affliction to the burden of human suffering cannot be stated except in a general way. It is fair to presume, however, that at a definite period of early recorded time malignant activity in some form was present and contributed its portion to the physical distress of the age. But it is difficult, indeed, to find ancient documentary evidence of cancer in such countries as India, China, Egypt and Greece, despite the fact that

their medical literature is quite extensive, especially that of Egypt, whose medical records contain descriptions of great antiquity, comparing favorably in forms of phrase and detail with many of those of the present day. Nor can the ancient history of cancer be correctly written at this late time, as it would not be possible to distinguish between cancer and benign tumor, on the one hand, and between ulcerated cancer and other severe forms of ulcer, on the other.

The comparatively limited knowledge in diagnostic discrimination at that time, as expressed in written characters, forbids the forming of definite conclusions in diagnostic purposes. It is apparent, however, that the ancient Greeks had a very good clinical idea of cancer, as a modern Greek writer, Couzis, of Athens (1903), in reviewing the past history of Greek medicine, says that the practical knowledge of the Hippocratic school was not inferior to that of his own day. The works of Hippocrates (460-370 B.C.) barely mention cancer, stating in connection with the treatment that "deep-seated forms are best untreated, for if treated the patient soon dies; otherwise he may hold on for a long time." It is not difficult for us of the present day to comprehend the full significance of this statement, as, no doubt, a few of us, at least, have witnessed the exemplification of this ancient expression written quite twenty-three hundred years ago. The old Greeks described fully the various distinguishing characteristics of cancer, noted the clinical differences in its various phases, portrayed quite accurately cancerous metastases and prescribed treatment not differing, especially in the palliative sense, from that in use at the present time. Galen (131-201 A.D.), in his extended works, considered cancer quite fully in its important aspects. But from his time to that of Ambrose Paré (1517-90 A.D.) little of special significance was added thereto.

Many of the notions entertained regarding the nature of cancer since Hippocrates' time seem dull to those whose enlightenment on the subject of bacteriology is a matter of recent years. The Galenic notion—probably that of Hippocrates—attributed cancer to the local effect of "overheated and unusually acid 'black bile' that cannot be purged away." Paré ascribed cancer to the effect of improper diet influencing unfavorably the liver and spleen, followed by "a shutting into the part to be attacked of thickened acid black bile." The emotions anger and hate aggravated the condition, he said. Harvey (1578-1657), the discoverer of the circulation of the blood, regarded cancer as a parasite on the body, living an independent existence at the expense of the latter.

John Hunter (1728-1793) seems to have been the first to recognize the influence of traumatism as a causative factor of cancer, aided by the consequent exudation of coagulable lymph into the interstitial tissues.

Many attempts to inoculate cancer date from the experimental period inaugurated by John Hunter. And early in the nineteenth century

positive results were reported and the parasitic doctrine became prevalent. The era of pathologic anatomy, which culminated in the histologic studies of Müller and Virchow, at first favored the idea of the parasitic nature of the cancer cell, but ultimately condemned it when Virchow showed, as then appeared true, that cancer cells were derived from pre-existing normal elements.

From this period to the present day, theories regarding the nature of cancer have multiplied to a bewildering extent. The two extremes at present are the following: (1) That cancer, like many other morbid processes, is due to a micro-organism; (2) that cancer represents a morbid proliferation of certain normal cellular elements as the result of diminished inhibitory action.

A few words more relative to the parasitic theory may not be amiss at this time. The view that cancer itself is a parasite was expressed by Harvey in 1651. By Dupuytren in 1805, Laennec in 1816, Cruveilhier in 1827, and Lobstein in 1829, all adopted this view as part of their teaching of pathologic anatomy. A little later the positive results of inoculation experiments were recorded, seeming to confirm the view, and Müller's description of the histologic elements of cancer in 1812 give a remarkably clear exposition of this theory, making the cancer cell the actual parasite which, if implanted in sound tissue, caused a cancerous growth. The question of transmission of cancer, however, remained unsolved, for it was then believed that cancer cells in the natural state could live but a short time outside of the body, and that their great size seemed to preclude their being taken up by the ordinary ports of entry. Also cancer did not appear on abraded surfaces, but in the parenchyma of tissues. In the face of these facts the parasitic origin appears to have languished, and to have been superseded by the later teachings of Virchow and others, which derived cancer from pre-existing normal elements.

It was quite apparent at an early period of investigation that the study of the nature and activity of this disease could not shed substantial light on the problem of its control, when based alone on the few cases falling under the notice of a small number of individual observers. The logical corollary of this situation had the foundation for statistical inquiry and collective investigation. It was not, however, until a comparatively recent date that statistical knowledge attained sufficient rank in this regard to arouse apprehension respecting the presence of cancer. In fact, it was not until the possibility of its being of a parasitic nature was again set forth, and the fact that perhaps it was communicable, that observers of cancer were impressed with the acute sense of a new danger.

It should be stated, although perhaps superfluous, that the deductions based on statistical estimates are not always conclusive, except perhaps to the minds of those whose contentions are encouraged or supported by the calculations. A preconceived notion relative to a disease, or a prejudiced opinion regarding it, can usually

gain substantial comfort from the study of plastic statistics. The product of the data may be "very like a camel," "or a weazel," or perhaps "like a whale," accordingly as a biased statistical Polonius may fancy. One has only to keep pace with the conflicting deductions often drawn from isolated examples of statistics, whether amended or not by additional knowledge, to realize the wealth of uncertainty that frequently attends statistical conclusions. Especially is this true in the instances of afflictions with subtle natures and divers environments, such as characterize cancer.

The geographic and time-of-life distribution of cancer especially concern statisticians and sanitarians. The anatomic distribution appeals directly to practicing physicians and surgeons. The local occurrence-center feature of the infection invites the reflections of pathologists and students of morphology. Geographically considered, cancer, as already stated, is a heritage of the human race in nearly all, if not in all, parts of the world. While it is yet unknown in some parts of South Africa (Snow) and other obscure places, it is not at all certain but that it exists, remaining hidden, however, from civilized view, because of the restraining influence of some heathen conception relating to it; especially as such conceptions have before this time thus controlled the doings of savage or superstitious peoples in other matters. Among the chief objections to the scientific value of statistical facts relating to cancer may be mentioned the inability to secure authentic complete diagnosis. The statement that a growth is malignant, when determined only by macroscopic examination, is so often fallacious as not to merit scientific confidence. Only microscopic reports of morbid growths should be given the privilege of membership in the rank of trustworthy data. I am aware that there are not a few distinguished observers who to-day seem to place quite as much confidence in the macroscopic findings of experience — their own experience — as in the conclusions of those with equal experience whose senses are fortified by the mechanism of a more exact knowledge. In any event, such reports as these should be classed by themselves, unless confirmed by reliable microscopic testimony. According to the report of qualified authority, the frequency of error thus arising is 7% in accessible growths, and for apparent reasons is increased when the growths are deep-seated.

The undoubted increase in human longevity of recent time adds many, indeed, to the list of those who from augmented years fall within the age limit of cancer attack, and thus apparently increase the spread because of a seeming greater morbid activity. And, too, it should not be forgotten that many from without seek harbor in a city for the relief which its hospitals and extended experience afford, some of whom, unfortunately, add their sad contribution to the city's death-rate from cancer. On the other hand, the life-saving means now employed in defending and rescuing the young from the baneful

ful onset of infectious disease is increasing the number of the living, and, therefore, neutralizing proportionately the apparent increase in death from cancer.

It is not impossible that the significance of the so-called "cancer localities" may be reduced to the standard of other fields of importance, when subjected to closer analyses of circumstances that are no essential part of cancer development or propagation. It is certainly evident that the slow and continuous increase of cancer, regardless of preventive measures and of human understanding, is controlled by influences of such subtle kind, as thus far to perplex beyond satisfactory solution the minds of the most astute observers.

The relative extent of cancer invasion of the accessible,³ of the inaccessible and of the intermediate parts of the human body in England and Wales during a three-year period affords an interesting study of this disease of great apparent significance, as will appear a little further along. Those superficial parts of the body falling readily under the scrutiny of the unaided eye and the touch of the physician are manifestly the seat of accessible cancer. Those deep and internal parts of the body, conveniently placed beyond the limits of unaided vision or mere touch are the sites allotted to inaccessible cancer. Those portions of the body within the reach of the finger and aided inspection are, for the most part, the sites of intermediate cancer.

The development of cancer of the parts included in each of the foregoing divisions of the body is comparatively much less manifest in individuals under twenty-five years of age than in those above that period, standing in this respect nearly as 1 to 70. The male sex suffers nearly 22% greater infliction from malignant disease than the female, during this time, which can be accounted for in part, I think, by the greater strenuousness of the male and the effect of the exposures incident thereto. The probable reasons for the greater infliction of the sexes under, than over, twenty-five years of age, it seems to me, have been considered sufficiently already.

The comparative difference between the frequency of occurrence of accessible and inaccessible cancer in both sexes, under and over twenty-five years of age is astonishing, even when proper deductions are made for the greater uncertainty of diagnosis in the latter kind. Inaccessible cancer in males of twenty-five years and under is 80% more frequent than the accessible kind. Inaccessible cancer in females of twenty-five years and under is nearly twice as frequent as accessible cancer. Inaccessible cancer in males above twenty-five years of age is three times more frequent than the accessible variety. Inaccessible cancer in females above twenty-five years of age is about 21 times more common than accessible cancer. Inaccessible cancer in males, regardless of age, is approximately three times more frequent than the accessible variety. Inaccessible cancer in females, irrespective of age,

is $2\frac{1}{2}$ times more common than the accessible. Inaccessible cancer is, without regard to age or sex, a trifle more than $2\frac{1}{2}$ times more common than cancer accessibly located.

While it is now, and has long been, conceded that external influences, traumatic and otherwise, contribute to the frequency of accessible cancer in a greater or less degree, it is also self-evident, I think, that other and more potent agencies than these must be invoked to account not only for the occurrence of inaccessible cancer, but also for its great preponderance over those accessibly located at all periods of life, more especially the dominant one, that above twenty-five years of age. The increase in cancer visitation, in connection with advancing years, has long been a matter of common knowledge. But that the location of cancer, at all times of life and especially in adult life, should be of inaccessible rather than of accessible nature, is more than remarkable; it is even startling, suggesting in no common tone the idea that, directly or indirectly, subtler influences than external traumatism or infecting agents can exercise are active in the development and spread of cancer. Perhaps it may be consistently said that the traumatisms thoughtlessly inflicted on the gastro-intestinal tract by the yielding to the temptations and pleasures of life — while less emphatic than those directed to the external surface — are none the less potent for evil because of the fact that their frequent and prolonged action may increase correspondingly an ill effect. However this may be, it appears quite reasonable to some that cancer organisms coming somewhere from without implant themselves in the tissues and develop there, notwithstanding the inhibitory effect of cooking, the power of digestion, the opposition of phagocytosis, and the feeble element of chance.

It is fitting now to remark that there appears to be no good reason to believe that the food of a people influences their relation to malignant disease in an appreciable degree.

Intermediate cancer in both sexes under twenty-five years of age is about half as frequent as is accessible cancer in both at the same period, possibly showing thus early in life the benign effect of protection of the intermediate parts from ordinary external influences. In the male after twenty-five years of age, intermediate cancer shows a comparative decrease in rate from that of the accessible form of about 32%, suggesting that the evil effect of external influences are superior in potency or greater in number in the male than are those causing intermediate cancer. In the female during this period (after twenty-five years) the rate of accessible cancer exceeds that in the male by about 37%. The intermediate variety, however, at this time in the female exceeds the accessible form by more than 48%, showing the rapid increase in the intermediate variety due to pelvic disease, which cannot be attributed in any practical degree to infection, but mainly to the traumatisms of maternity and the age limit of certain near by tissues. It should be stated in this connection

that the liability in both sexes to cancer of the gastro-intestinal tract gradually and quite uniformly diminishes from the stomach downward toward the external opening, but not including it. This fact seems to justify the thought already stated regarding the possibility of the effect of dietary traumatism on the stomach and the upper intestinal tract.

The age limit of the tissues of the stomach in health conforms to the nutritive requirements of the life to which they are all important; consequently this feature of the causation of cancer, which so freely contributes to the total of this disease in the mammary gland and the uterus, can play no part in the causation of cancer of the stomach, making it, therefore, the more apparent that alimentary traumatism and dietary abuses are dominant influences in the causation of gastric cancer. Another fact which seems to confirm this position is that cancer in the male in the alimentary canal is quite seven times as common as in the female, notwithstanding the further fact of the general tendency of females to suffer from cancer of the alimentary canal at an earlier age than males. Surely, if cancer of the stomach were dependent in an appreciable degree on parasitic infection of alimentary substances this great difference in the relative proportions of infliction of the sexes should not exist. Finally, in males 80% of all cancer affects the alimentary canal. In females 80% of all cancer affects the reproductive tract, including therewith the breast.

It seems that not a little that has been said in this relation is corroborative of the belief of those who regard cancer as a nonparasitic disease, which, in any circumstance, is not communicable.

A longer continuance in theoretical indulgence would necessarily deprive us of the opportunity of speaking in an emphatic manner, of an exceedingly important practical part in the contest against malignancy. This statement is prompted by the facts that cancer appears to be on the increase in civilized countries, and also that the limit of effective operative therapy, the only agent of cure of general, settled repute, has already quite reached the confines of highest efficiency, under the present established lines of action. It naturally occurs to thoughtful members of the profession, therefore, to inquire regarding what can be done by way of abatement and protective forethought, that will secure the holding of that already in hand, while the search for increased power in curative therapy is advanced, let us hope, to a more successful issue.

As in any other field of human contention so here the resources of every avenue of effort should be determined with care, and utilized with vigilance and pertinacity. The operative warriors in the conflict against malignancy have striven faithfully and logically during the last years of the struggle, gaining advanced foothold by means of approved technique and prompt aggressiveness. By these masterly means

in the cure of cancer of the breast, of the uterus and of the stomach, many, many years of comfort and happiness have been added to the lives of the afflicted and given to those who rejoice because of their preservation. These striking illustrations of cure in organs so profoundly concerned in the inception and preservation of life are also an earnest of the outcome in other fields of operative endeavor in this respect. Unhappily, our fond anticipations of approaching relief, encouraged by this gain on malignant disease, are so often demolished by the ruinous delay of the afflicted, in utterance and action, as well high to arrest the increasing hope from operative measures. Too often, indeed, during the consideration of operative interference is heard the utterance of the sad truth, "Too late," "Too long deferred," and the like, on the part of all concerned. The remedy for this lamentation is prompt surgical action; and prompt surgical action requires a prompt acknowledgment of the presence of an unwelcome growth or manifestation on the part of the sufferer, supplanted by earnest co-operation in diagnosis and treatment.

It is surely not amiss to repeat, that the outcome of operative endeavor in malignant cases, has well-nigh reached the highest possible success, unless aided by increased faith and lessened secretiveness on the part of the sufferers from a malignant infliction. Those who are afflicted with accessible growths are comparatively early aware of the presence of these unwelcome visitors. And when they shall have exercised the same degree of resentment because of physical intrusion on the part of a growth, as commonly distinguishes social or business intrusion on the part of a meddler, then, indeed, will much be gained for increased success in the struggle against malignancy. Since it now appears that cancer is located most often in the deep internal parts, beyond the safe limits of unaided sight and mere touch (inaccessible cancer) $2\frac{1}{2}$ times more frequently than is accessible cancer, regardless of age or sex, then, indeed, is the fact doubly impressed, of the necessity for prompt acknowledgment of the presence of morbid manifestations and prompt determination of their nature. The handicap by inaccessible cases because of their greater distance from the surface often enables the disease to advance undiscovered to a degree forbidding operative action when their presence is finally known. In too many instances of cancer, especially the inaccessible kind, the reasonable suspicions of its presence on the part of the patient or friends are quieted by the soothing platitudes of medical advice, until all opportunity of relief is at an end. The physician and the surgeon should join in the observation and treatment of all such cases as these, early, fostering a mutual plan of action that contemplates prompt explorative investigation in doubtful instances, and forbids delay in those of undoubted character.

It is "carrying coals to Newcastle" to state in this presence, or in that of any medical gathering of the present day, that cancer invades

contiguous tissues early in the course of its development. How early no one can know. How late no one can tell. Of this, however, we are assured: malignant activity is measured by the inherent nature of the morbid process, or by the receptive character of its host, and sometimes by both; and unfortunate indeed is the patient who is the helpless victim of both of these influences. But, on the contrary, correspondingly fortunate is one in whom each of these influences is at a minimum. A knowledge of such facts should admonish us to be charitable on the one hand, and discreetly aggressive on the other; charitable to the professional brother whose operative results may, therefore, be less fortunate than our own; discreetly aggressive so that the area of infliction may be timely removed by operative effort. Early explorative determination of the nature of disease, followed at once by operative relief in suitable cases, is to-day the potent measure of succor pending the advent of means of greater beneficence than those now at hand.

In emphasizing the pre-eminent importance of early measures of relief, one has only to point to the astonishing results which have attended the operative practice of many distinguished surgeons of this and foreign countries. And I believe that it will not be regarded by any one as evidence of unwarranted pride or of bad taste if, in this connection and on this occasion, we should mention the name of our distinguished president.

If to these means of cure there be now added another for the sake of greater security, the picture in this respect will be complete,—a means contemplating the education of the people on the great importance of overcoming reticence regarding such matters in their incipency, rather than sacrificing life by senseless delay. Patients should be taught that the evidences which they may regard as important and entitled to serious thought and decided recognition are but a step removed from the presence of hopeless despair and final destruction. They should be told that the subtle onset of malignant disease often baffles the keenest perceptions of the most experienced, requiring for arrest and for cure the best we have and, far too often, more than we can give. The exercise of vigilance in patients already operated on by those who are profoundly concerned in the cure, should be periodically and untiringly practiced in order that the first evidence of disease may be quickly detected and remedied by renewed operation. The stake of the contest in such cases as these is a human life, and all the comfort and happiness relating thereto. Every victory is another triumph over malignant infliction, of which there are very many in surgical experience. In the general struggle for victory against malignant disease, it should not be forgotten that all those fall who do not seek relief; and that all those who early seek relief will surely secure added years and increased comfort, and that not a few will be finally cured. And important it is to remember that the number

cured will be measured by the promptness of early diagnosis and curative action followed by untiring periodic scrutiny of the vulnerable points of return. The degree of fortitude required to sustain a patient under repeated malignant attacks and prompt operative defense is akin to that with which martyrs are endowed.

Finally, an emphatic warning should be given to all against the seductive influence exercised on the afflicted, by the "perversions of judgment and vain imaginings" which too often allure them from the path of scientific beneficence, trodden by honest, sympathetic aid, into the wilderness of arrant quackery, infested by ghouls of heartless gain. Nor should one hasten unduly to substitute for established method in operative cases means which are still on trial, even though encouraged to do so by honest yet unsettled opinion.

Rather than this, one should grow in courage, stimulated by examples of successive cures from early effort, and by sentiments attuned in verse by our profession's greatest poet and our hosts' brightest ornament:

"Here stand the champions to defend
From every wound that flesh can feel,
Here science, patience, skill shall blend
To save, to calm, to help to heal."

Original Articles.

WHAT EFFECTIVE MEASURES ARE THERE FOR THE PREVENTION OF THE SPREAD OF SYPHILIS AND THE INCREASE OF PROSTITUTION?*

BY CHARLES GREENE SUMSTON, M.D., BOSTON.

It is not to be supposed that there exists at the present time a single moralist sufficiently severe, or rather insufficiently enlightened, who would dare to doubt the necessity of measures capable of combating the propagation of venereal diseases. Fortunately, the time has passed when syphilis was believed to be the result of depravity alone, and was considered as the legitimate punishment of *debauché*. The numerous sources of infection are too well known at the present time to uphold the old rigorous theories and to these I shall not revert.

Of all the diseases which may affect the human race by contagion and which brings about the greatest disasters to society in general, there is not one more serious, more dangerous, or more to be feared than syphilis. This I believe is generally admitted, and since this is the case why should not the proper authority profit by the knowledge that the progress of science dictates? Many years ago Michel Lévy said: "The extirpation of this leprosy of our time that is called syphilis is not above the power of government. The sequestration and leproseries put an end to the old scourge, leprosy—the plague has been the object of an extensive and expensive prophyl-

actic control, every nation has made sacrifices to do away with the germs of smallpox, yet syphilis has caused more harm than all these diseases put together. It silently deteriorates generation after generation, its contagion is more evident than that of the plague; why are not the same barriers and the same means of extinction built up in all countries? Such is the human race; the lightning of insidious epidemics which pass over our heads like an electric cloud, benumb and frighten people; they endeavor to prevent their return, while they become familiar with the slow and continued plagues which they carry in their flanks and which cause them to undergo hereditary ravage with the same patience that they show towards meteoric phenomena."

Syphilis is not, like smallpox, a disease whose miasms disseminate contagion to distant parts, neither is it like any of the exanthemata, susceptible of producing itself spontaneously; alone, immediate contact produces its development. Its extinction, although difficult, is not a chimerical dream; and if all nations would some day establish a complete system of international prophylaxis, much could be done for suffering humanity.

The word progress is upon everybody's lips, and modern civilization is justly proud of its numerous conquests. Scoury has disappeared from those localities where it formerly reigned endemically; vaccination has stopped the ravages of smallpox, but syphilis still continues to be propagated and for centuries has not ceased to eat the limbs of the human race. Leprosy was done away with; why should it not be the same for syphilis?

Here, however, I would say, I do not harbor too great an illusion. If the extinction of syphilis is not theoretically a dream, the universal consensus of opinion of all governments is that in the present condition of society it is a pure Utopia. In point of fact, nations vary in character as do individuals, and a kind of mutual and systematic opposition is constantly present acting as an obstacle to their united action, and it is to be feared that this antagonism by continuing will, for many years to come, offer a great resistance to the realization of any united efforts. If, at the present time, much has been done to prevent the extension of syphilis and other venereal disease, it nevertheless remains a glaring fact that there is still much to be done and that the large majority of prophylactic means now existing require great modification.

One of the most important means at our disposal for reducing the increase and spread of syphilis certainly resides in hospitalization, to which I shall now briefly refer. Formerly, all cases of infectious fever were placed in a common ward, but to-day all our modern hospitals have special wards or buildings reserved for diphtheria, scarlet fever, measles, etc. What has been done for acute infectious diseases, attempted in chronic infectious and for a number of years back we have watched the development of special hospitals or sanatoria for tuberculosis. No matter what may

* Read by invitation before the Section of Hygiene at the meeting of the American Medical Association, Boston, June 5, 8, 1900.

be the divergence of opinion existing relative to these establishments and the results which may be obtained, it is nevertheless true that it was to this prophylactic procedure that the ancients were able to attenuate, if not to cause to completely disappear, the hideous disease that leprosy was in former times.

Among those essentially contagious diseases which should receive the attention of modern prophylaxis and hygiene, venereal diseases should certainly be given a distinct and separate place. No one would to-day dare to uphold that the ills produced by the pathogenic agents of these diseases are not at least quite as considerable as those of tuberculosis, for example. I do not believe that I am going too far when I say that gonorrhea in the female is grave, prodigiously grave, and that it may be considered as the most fearful wound in young households. As to syphilis, with its high death-rate and infantile malformations, with the disasters that it produces in certain individuals, with the fearful affections whose development it favors and, although they bear the special name of parasyphilitic, which are none the less attributable to it, we will not insist upon this phase of the question.

Prophylaxis has, consequently, the imperious duty of considering these diseases, and among the arms which it has is certainly hospitalization. And, in the first place, let me say that I disagree completely with those who will not recognize an autonomy in venereal diseases, which I do not believe can be refused them, those who in principle believe that these patients should be placed in general medical or surgical wards corresponding to their cases, such as, for instance, urethritides and gonorrhoeal vaginitides in a service of genito-urinary surgery; mucous patches, cutaneous manifestations of syphilis and chancreoid ulcerations in the service of the dermatologist, etc. In a word, I believe in special hospitalization for the simple reason that the end to be attained is prophylaxis, and the first condition to fulfill with this end in view when dealing with venereal disease is isolation of the patients. Until this is done hospital treatment will remain completely ineffectual. This does not mean that I believe that hospitalization is in itself sufficient to furnish the solution of such a complex problem as venereal prophylaxis. If venereal diseases may be compared to infectious diseases on account of the factor *contagion* which is common to both, and if we make abstraction of extragenital infections, which, for that matter, represent a very small portion of cases, it must be recognized that they differ by the manner of contagion. While infectious diseases generally take on the epidemic type, while they may seize upon an individual who is endeavoring to defend himself against them, venereal affections never assume the epidemic type and only exceptionally seize upon an individual, who, knowing them fully, does what is necessary to avoid them. We possibly might, as has already been done by a number of authorities, assimilate to epidemics those instances where infection of a large number of healthy

individuals has taken place from a single infected subject. Military surgeons, especially those belonging to small garrisons, have frequently noted the contamination of a large number of soldiers from a single woman.

This assimilation I do not wish to make, believing that it is merely a simple way of looking at things, original without a doubt, but susceptible to much discussion. Is it because venereal diseases are not contagious in the same way as eruptive fevers, or because their mode of contagion is nearly always genital, that we are led to consider an entire group of diseases for which hospitalization is useless, or merely of a temporary nature? This category of patients might very well be kept temporarily in a hospital, for a time, just sufficient to initiate them into the manner of treatment that they should follow and to teach them to conform rigorously to the rules of general hygiene which are so important in the treatment of their disease. It is for this reason that in the case of syphilites, for example, I believe it would be well to detain them in a hospital for a few days with their consent, when they come to consult for the first time, and after their discharge from the wards, they may continue the treatment in an out-patient department.

Beside voluntary hospitalization and from the theoretical view point, hospitalization should be made obligatory for those individuals who are voluntarily contagious, for those who are perfectly well aware of the danger of their disease and who do not hesitate to communicate to others the affection of which they are possessors. There would probably be no division of opinion upon this subject in the medical profession if such measures could be applied to the male as well as the female. It would be quite as justifiable and legal as the modern means of prophylaxis in the case of other infections, such, for example, as the quarantine imposed upon ships, or the establishment of a sanitary cordon and so forth. Although a contagious venereal subject cannot be held by obligatory hospitalization, there is, however, a class which I believe should be compelled to submit to it; I refer to prostitutes. This measure has been considered arbitrary, illegal and inhuman, and certain people believe that prostitutes should be free to enter a hospital or not as they see fit. This question has given rise to long and ardent discussions to which I will not refer. It seems to me, however, that the only way to control the transmission of syphilis is to sterilize prostitution as we would sterilize our dressings for a surgical operation, and could this be accomplished the gonococcus and spirocheta pallida would, to a great extent, be removed from the list of pathogenic organisms.

I shall here ask to be permitted to make one reflection, namely, who is the most guilty from the view point of propagation of venereal diseases,—man or woman? I have no hesitancy in believing that it is the woman, and for these reasons. For example, a man contracts syphilis. Where does he contract it? Why, from contact with a female, who, from the very fact that she

entered into relations with him, leads an active genital life. To whom will the man transmit it? Evidently to another woman, who, just like the first, is also leading an active genital life. Thus, the infection being contracted from one woman returns to another woman. And this woman, what is she? An avowed prostitute only rarely; statistics prove this; far more frequently she is a clandestine prostitute and to this class I shall not refer. It occasionally, also, is a girl who has recently fallen, contaminated by her first lover, and who, forced by an exaggerated sexual instinct, or by misery, is perhaps called upon to descend one or more rounds of the ladder of vice. In other words, no matter what may be the cause of her fall, she nevertheless becomes a candidate for prostitution. This reasoning may appear upon the surface as a mere sophism, but in reality it is not so, because in the male no homologous condition is to be found like that of prostitution in the female.

Another and most excellent measure for the prevention of both venereal diseases and prostitution is the proper education of young people of both sexes in sexual matters, and many excellent contributions to this subject have appeared of late. To mention the various writers who have advised this very common-sense course would be far too long, and I would merely refer here to two recent articles, the first from the pen of Dr. Morrow, appearing in *American Medicine*, Jan. 13, 1906, and one from Valentine in the *New York and Philadelphia Medical Journal*, Feb. 10, 1905. The former writer says that the general principle is laid down that the education of the public is the most valuable of all measures for the prevention of communicable diseases. Its importance is emphasized in the case of diseases the communication of which lies entirely within the control of the individual. The object of the proposed education is to give the youth of this country a clear comprehension of certain physiologic truths which have a direct bearing upon the regulation of their sexual lives, and of the serious consequences in the shape of disease and death which follow a breach of hygienic laws. In other words, it is to teach them how to live according to the laws of a healthy nature. This instruction in the physiology and hygiene of the sex function should form an essential integral part of the education of youth.

Dr. Morrow criticises our present educational system, the policy of which is to launch the young into the world in complete ignorance of everything pertaining to the laws of life reproduction. In seeking this knowledge the youth is but obeying the law of his mental evolution. Since this knowledge cannot be had from legitimate sources—from parents and instructors—it is gained surreptitiously, and usually from depraved sources: dissolute companions or erotic or quackish literature. To be salubrious as a safeguard, therefore, this hygienic education should be given in youth, for it is during this period that the foundations of what may be termed the "sexual character" are laid, and habits of mind and

practices are formed which, in a great measure, determine the future sexual life of the individual.

Valentine concludes his most interesting paper as follows: "Sexual physiology and hygiene need not be formally taught girls, save in the exceptional instances in which the genic impulse is prematurely developed. Sexual physiology and hygiene should be taught every boy, when mental and sexual puberty makes him capable of beneficially utilizing the knowledge. The nature and scope of instruction on sexual subjects should be regulated according to each pupil's ability properly to appreciate the warnings inseparable therefrom.

The age at which a person may safely be instructed in sexual subjects is that age at which, in each individual case, such instruction becomes necessary for the purpose of moral and physical prophylaxis. The individuality of the parent, physician or teacher should be the guide to the choice of one or the other as the exponent of the facts.

Educational institutions may be utilized for instruction in sexual subjects, but such instruction must be given to small groups of pupils selected because of their mental parity as nearly as may be.

Textbooks on elementary hygiene should not contain chapters on sexual physiology. Those charged with imparting instruction on sexual subjects should be provided with separately printed chapters on the physiology and hygiene of these matters. These separately printed chapters could then be given with the greatest discretion to such pupils only whose mental development would preclude their misusing the information derived therefrom.

All instruction to the laity on sexual subjects should be directed essentially to serve as a groundwork for the following ideas:

(a) Many learned men hold that ante-nuptial coitus is not necessary for the health of the individual.

(b) Continence reduces the sexual desire.

(c) Gratification of the sexual impulse before marriage degrades the moral tone and exposes to serious infection.

(d) Venereal diseases are not disgraceful infections, but the result of unfortunate lack of self-control.

(e) The greatest danger at the inception of venereal diseases is in their being misdiagnosed by quacks.

(f) If a person is so unfortunate as to contract a venereal disease, self-preservation should cause him to immediately seek the advice of his family physician.

I believe that the public should be particularly enlightened on the dangers of gonorrhea, that it should be fully aware that recent statistics conclusively show that the number of gynecological operations increase each year, necessitated by lesions due to the gonococcus. The husband, either criminally or unconsciously, transmits the gonococcus to his wife, usually in the following manner: In his bachelor days he contracted a

gonorrhea, which was treated according to the usual methods; the gonorrhea disappears, but leaves in its place an insignificant gleet, a chronic discharge of such apparently little importance that the patient neglects to have it treated, supposing that it will cure itself. Upon this he gets married, usually without any thought of the past and without consulting a physician as to the seriousness of his little morning drop. After a variable length of time, and as soon as a congestion of the uterus predisposes the organ to microbic receptivity, the young wife presents all the well-known symptoms of a gonorrheal infection.

To a certain extent the public has surmised the dangers accruing from this disease, but not to the extent that it should. In face of the terrible consequences to which gonorrhea may give rise, the mortal dangers to which the spouse is exposed, sterility following gonococcal complications, certain members of the profession have declared open war against gonorrheal subjects culpable of contamination. In Germany, especially, a law is under consideration which tends to protect women against venereal contagion from the husband, or even the lover. Professor Hegar in Germany, Jullien, Cazalis and several other physicians in France have proposed an obligatory verification as to the genital innocuity of the future husband. As a conclusion to this I would advise that young men be told that, if they are unfortunate enough to contract gonorrhea or syphilis, they should loyally consult a reputable physician before their marriage to ascertain whether or not they are fit subjects for matrimony. It is high time that the profession put an end to public ignorance in these matters and thus to a great extent avoid many catastrophes and moral pain.

There is a sad commentary on the practicability of the work of the temperance reformer in the fact that each succeeding generation of medical men is brought face to face with the disheartening truth that alcohol is still the "open door" through which stalks the foul spectre, "venereal disease." Since the days of Noah alcohol has continued to be the most powerful weapon in the seducer's armamentarium. In this he has an agent more deadly to virtue than the most powerful implement of warfare is to life itself; and with it he has in his power to pave the way for suffering beyond human expression.

It is not my purpose to descant upon the horrors of intoxication, nor is it at all necessary for the purposes of my theme. I do not need to follow the victims of the drug beyond that point where it robs the intellect of its inhibitory powers and deprives it of free agency. Such a state of mind, by no means of necessity, implies drunkenness; indeed, it comes at a point well on the hither side of that condition, and the horror of it all lies in the very fact that brain activity is not actually annihilated, but only cruelly perverted.

In this state the ordinary calm, self-restrained,

discriminating man may be transformed for the time being into a rutting animal and the virtue of a similarly endowed woman may drop from her like a mantle.

In the presence of men of your training and experience of human frailty, it is almost supererogation on my part to pursue this line of thought in greater detail. Given two creatures of opposite sexes, created after the image and likeness of the Maker, reduce them by alcohol to the state of mind above described, and the inevitable results are familiar to you all.

The stage settings that serve for the act in which the luetic virus may be imparted vary from the most sordid and squalid to the most luxurious and artistically perfect the human intellect is capable of inventing; and the actors in this most unspeakable of human tragedies, in like manner, represent each and every stratum of the body social.

The foci of propagation of venereal disease and prostitution do not wholly reside in houses of ill-fame. The reformer must look to the comic opera company, the private dining-room, the furnished lodgings, the apartment house on the "easy virtue" style, the steamboat stateroom, the massage and manieure parlors, the automobile, the electric baths, the fortune telling outfits, and, lastly, the avowed *maisons de joie*. The American cities have two potent foci for the development of prostitution, of which continental cities cannot boast; I refer to the downtown office building and the bachelor apartment houses so much in vogue at the present time.

Prostitution, especially the clandestine form, is rampant in Boston, and in proportion to its population, the Hub can compare favorably in this respect with any European city of its size with which I am familiar.

Beside those causes of a general order which influence prostitution and criminality in general, are others which belong more particularly to the former. Leaving aside the culpability belonging to its authors, this crime is the consequence of other mistakes on the part of jurisprudence and public opinion. A large part of the responsibility rests upon public opinion, because it encourages the seducer by its indulgence, perhaps even by its admiration. Public opinion also directs the education of women, and the present system forces her especially towards the arts of seduction and coquetry, thus making her easy to seduce, rather than seductive. The seducer of the twentieth century generally does not understand the extent of his responsibility; he goes about the proceeding because he is fully aware that many others have done the same and he is covered by public opinion until the day that the scandal breaks out. Our up-to-date morals have taught him that to seduce a young girl, up to that time virtuous, and afterwards to abandon her, in other words, of dishonoring her, and making her a candidate for prostitution, is practically nothing, and jurisprudence in our country hardly takes into consideration the moral assassin.

Another important factor in the development of the prostitute is our modern education. In large cities young girls of the people and working classes are, by their clothes, their manners and even mentally, in a condition far superior to the men of their own class. From this very fact, they become easy conquests for men of the well-to-do and richer classes, and there would be fewer seduced girls and married clandestine prostitutes if the parents did not sanction their daughters' luxurious habits, far above their social rank and fortune.

Another potent cause forcing women to their fall is the insufficiency of salaries in large department stores and workshops. The conduct of a young girl, whose poverty prevents her from entertaining the hope of marriage, thus no longer becomes a moral question with her, but one of interest, and she reasons to herself that it is just as well to get as much out of life during youth as possible, if nothing but poverty-stricken old age and infirmity are to follow the pleasant days of the springtime of life.

On the other hand, the conception of marriage as the only possible mode of union has also disappeared from the minds of the mass of the population; marriage has ceased to be a sacrament and is looked upon merely as a contract, which in turn, under the influence of public opinion, law and jurisprudence in the matter of divorce, becomes every day still more fragile.

To sum up, it would seem to me that in order to deal with the spread of syphilis and prostitution, we should take into consideration the control of existing morals and opinions, teach the youth of our country the evils accruing from venereal diseases and the erection of proper hospitals for those already afflicted and who may become dangerous to society from this fact.

CONSIDERATION AND TREATMENT OF THE ACCIDENTS OF SURGICAL ANESTHESIA WITH SPECIAL REFERENCE TO PREVALENT DRUG TREATMENT*

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I WILL first consider the physiology of the vascular system, then general anesthetics, then the drugs commonly used for anesthesia accidents and lastly the accidents themselves, their cause and treatment.

The vascular mechanism may be divided into two factors, one constant or approximately so and the other variable. The constant is the length, natural bore and distribution of the vessels, the extensibility and elastic reaction of the walls and the valves. The variable is the beat of the heart, and the peripheral resistance. The variations of the latter being brought about by muscular contraction or relaxation of minute arteries, and also, the character of the circulating blood.

The two chief variables, the beat of the heart

and the width of the arteries, are governed and regulated by the central nervous system. But the central system is not the only means of government; there are other modes of regulation, and so other safeguards.

Heart. The object of systole of the ventricle is to secure the needed arterial pressure which drives blood through the capillaries back to the heart. To do this the ventricle must deliver at a stroke a certain quantity of blood, exerting the pressure required to send the blood into the arteries and repeating the stroke at appropriate intervals. Hence the work done will, in part, depend on the quantity of the blood collected in the ventricle during diastole, that is, on the inflow from the venous system. If the quantity be too small, then, though the whole contents of the ventricle be ejected with adequate force at each stroke and the stroke repeated regularly, the ventricle will fail in its object, that is, a lessened venous inflow will tend to lessen and an increased inflow will tend to increase the work of the heart. The venous inflow is dependent on various causes and may be modified by various events.

Blood in filling the ventricle distends its walls, and this distention, especially the fuller distention resulting from auricular systole, also influences the ventricular stroke; for contraction of cardiac muscular fiber is increased up to a certain limit by the fiber being put on the stretch. The influence is more distinctly seen on the arterial side. The greater the arterial pressure against which the ventricle has to deliver its contents, the greater the tension of the ventricular walls. Hence, high arterial pressure tends of itself to enforce ventricular systole.

The spontaneous beat of the heart is the outcome of nutrition of the cardiac tissues. In the absence of all interference by inhibitory or augmentor fibers the heart will continue beating with a certain force and rhythm, determined by metabolism going on in its muscle and nerve elements. Thus the heart will be influenced by anything which effects metabolism. The obvious and direct cause of changes in nutrition and so in the behavior of the heart lies in changes in the quantity and quality of the blood supplied to the cardiac tissues through the coronary arteries. If the coronary arteries be tied or otherwise occluded, the heart in a few seconds comes to a standstill. This illustrates to an extreme how closely rhythmic contraction of cardiac fibers is dependent on blood supply.

The quantity of blood flowing through the coronary arteries is dependent on pressure in the aorta or rather on the difference in that pressure and the pressure in the right auricle into which the coronary veins enter, and on the resistance offered by the coronaries. Hence, with high aortic pressure, more blood passes to the cardiac tissues. This is favorable to the beat and may be the direct cause of the stronger stroke.

More important than the quantity is the quality of the blood flowing through the coro-

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naries. Blood deficient in oxygen or overlaid with carbonic acid affects the heart beat; also blood with drugs, poisons or products of body-metabolism. When breathing is interfered with, the too highly venous blood, while it acts unfavorably on cardiac tissues, also stimulates the cardio-inhibitory center, whereby the heart is slowed and its expenditure of energy lessened.

The heart beat is regulated by inhibitory nerve fibers from the central nervous system through the vagus, and accelerated by augments fibers from the sympathetic. Any disturbance from the sensory nerves passing up and stimulating either of these, causes marked slowing or acceleration, according to its amount. The effect of inhibition is to lessen the expenditure of energy. The heart cannot be brought to final arrest by simple action of the vagus. The effect of the augment action is to increase the expenditure of energy. This can, at times, cause final arrest of the heart. Disordered cardiac nutrition shows itself frequently in a dilated condition of the ventricles; the systole is inadequate to secure adequate discharge into the arteries, the residual blood in the ventricle is increased. If the augment action is brought to bear on such a weakened and dilated ventricle, it may produce fruitless expenditure of energy. The beat though increased is still inadequate to secure needed discharge of the contents, while the fiber is exhausted by increased metabolism, and the final result is cessation of the beat.

The action of the minute arteries and peripheral resistance is of very great importance. The minute arteries are supplied with two kinds of mechanism which control the peripheral resistance. The vasoconstrictor mechanism of the central nervous system may be used as positive constriction or negative dilation. The vasodilator mechanism exerts its influence in only one way, to dilate. The constrictor mechanism seems to be in more general use. When the arterioles are constricted the blood pressure is high; conversely, when dilated the pressure is low. This is important to remember, as during surgical shock the pressure is low.

General Anesthetics, Ether and Chloroform.—These produce the same effect as alcohol on the central nervous system, a progressive paralysis commencing with the highest cerebral functions, those of self control, and passing downwards through the intracranial divisions. The spinal cord is affected before the medullary centers, which are the last of the central system to be paralyzed. Sensory functions are depressed before motor. Both anesthetics act, at first, as stimulants to the system. Their action on the respiratory center is partly direct, partly indirect. In the first stage the respiratory movements are slowed or stopped temporarily by reflex action set up by irritation of the terminations of the trifacial in the nose and throat and of the pneumogastric in the larynx and bronchi, but this is only of short duration. During the second stage the respiration is often rendered irregular by convulsive struggling which produces alter-

nately periods of asphyxia and deep gasping movements. During the third stage the respiration is regular and no reflex disturbances occur because the sensibility is so dulled that the continued irritation on the nerve ends causes no reflex response. In this stage the direct action of the drug on the center shows itself in slow and shallow respiratory movements. If pushed far enough, the slowness and weakness increase until finally respiration ceases entirely from paralysis of the center.

On the circulation the first change observed in the blood pressure tracing is often a slowing or temporary standstill of the heart due to reflex stimulation of the inhibitory center from irritation of the air passages, but in others a short rise in pressure is seen from similar reflex action on the vasomotor center, later, a fall in pressure and distinct slowing of the beat; eventually, if continued far enough, the pressure is zero and the heart ceases to beat. The majority of observers believe that this falling is due to failure of the vasomotor center, especially of the vasoconstrictor through repeated irritations of the sensory nerves, sending impulses to its center and thus tiring it out by repeated stimulations.

This has an important bearing on shock. The vessels themselves are not acted on directly by the anesthetics in question.

Both anesthetics dissolve the red corpuscles and free hemoglobin, when experimented on outside the body, but I can find no proof that this occurs in the circulation. Apparently, when absorbed chloroform exists not in simple solution, but in combination with cholesterol and lecithin of the red corpuscles.

The drugs generally used in anesthesia accidents are strychnia, the nitrites (nitro-glycerin, amyl nitrite, sodium nitrite), digitalis (digitalin), adrenalin, atropine, hyoseyamine, hyoscine, caffeine and alcohol.

Strychnine is a stimulant and acts on the central nervous system. It slows the heart action by stimulation of the inhibitory center. It stimulates the vasomotor center, causing constriction of the peripheral arterioles, and thus causes increased pressure. This is done by small doses.

The *nitrites* (nitro-glycerin, amyl nitrite, sodium nitrite) act chiefly on the circulation. They cause depression by action on the vasoconstrictor center negatively or by depression of the nerve ends and unstriated muscles of the arterioles, causing dilatation of small vessels with corresponding low pressure.

Digitalis (digitalin) acts as a stimulant on the central nervous system, but principally on the heart and vessels. The action on the central nervous system is of small amount. It stimulates the inhibitory cardiac and vasoconstrictor centers in the medulla only in small doses. In large doses it stimulates other parts of the medullary center causing vomiting, increased respiration and sometimes convulsions. The action on the heart itself is most important and is due to an alteration of the cardiac muscular tissue.

In our present knowledge, it increases the muscular tone of the heart, and thereby the relaxation of muscle is less perfect and contraction more complete and prolonged; but the inhibitory action on the vagus, on the contrary, tends to render the tone less complete and to produce less contraction and more complete diastole. Therefore its muscle and nerve actions are diametrically opposed to each other. In cases where the coronaries are affected by sclerosis or degeneration, it is not advisable to use this drug, on account of rupture. It is contra-indicated when quick results are needed on account of its slowness of action, as Bartholow expresses it, "we give digitalis to-day and expect results to-morrow." Most writers believe that it is only to be given in broken compensation.

Adrenalin chloride acts directly on unstriated muscle fiber and possibly on local nerves. It has no action on the central nervous system. It may cause stronger action of the heart and also constrict the arterioles, causing increased blood pressure. But on account of high pressure it may cause rupture in some of the internal organs, as the spleen.

Atropine acts as a stimulant to the central nervous system, followed by depression, and paralyzes the termination of a number of the nerves, more especially of those that supply involuntary muscle, secretory glands and the heart. It differs from strychnia, which acts on the lower parts of the nervous axis, spinal cord and medulla, while atropine acts more strongly on the higher divisions, motor of the brain. Atropine paralyzes the inhibitory terminations of the vagus in the heart. Blood pressure is increased by the augmented output of the accelerated heart and the stimulation of the vasoconstrictor center in the medulla which contracts arterioles in the abdomen. At the same time there is a compensatory dilatation of the skin vessels, due to the central action of the drug. It also stimulates and then depresses the respiratory center.

Hyoscyamine acts similarly to atropine except that it is a depressant from the start.

Hyoscine is more depressing than hyoscyamine.

Caffeine is a stimulant to the central nervous system. It causes a rise in blood pressure by stimulation of the vasoconstrictor center, similar to strychnia, but slower and of less strength.

The main causes of death under anesthesia are shock, collapse, shock with collapse, asphyxia from mechanical obstruction or otherwise, and status lymphaticus.

Status lymphaticus is a condition of which little is known excepting that it affects the lymph glands and channels in some manner. A few cases of death, during or following anesthesia, have been reported and all have been with chloroform, I believe. It is impossible to diagnose the case before death, and then only by an autopsy. No drug treatment has been suggested.

Asphyxia from mechanical obstruction, etc. is due to lack of oxygen entering the lungs. It is due generally to a foreign body in the air

passages or to paralysis of the respiratory center from an accidental puncture of the lateral ventricles during a brain operation. Treatment of a foreign body is quick removal or low tracheotomy and artificial respiration. There is no treatment for a puncture of a ventricle with its accompanying loss of fluid. Artificial respiration will help as long as it is kept up, to a certain limit, but if stopped the patient will die. Asphyxia may be caused by fluids entering the air passages in a sufficient quantity. Asphyxia may be due to the tongue falling back or a swelling of the base of the tongue or to edema of the glottis. The treatment of the first is to pull out the lower jaw and tongue by grasping with the fingers on the outside angles of the jaw with thumbs inside and at the base of the tongue, pulling forward and outward. For swelling and edema, tracheotomy must be done at once with artificial respiration following. No drugs.

Shock is by far the most important emergency which we have to deal with.

Shock and collapse though distinctly different as to cause will be considered together and differentiated as necessary. The most important feature of shock is the lowered blood pressure. I will briefly consider the mechanism regulating the blood supply. Blood pressure depends, first, on the force and rapidity of the heart beats; second, on the amount of the circulating blood; and, third, on the space which this given amount of fluid has to fill. Given impulses, which cause vasodilation, the great increase in the caliber of the smaller vessels all over the body increases the amount of fluid. The vessels of the body are dilated or contracted by impulses from the vasomotor center on the floor of the fourth ventricle. The impulses are sent from here to terminal plexuses in the muscular coats of the vessels. The best method of raising blood pressure is to produce intense vasoconstrictor impulses.

According to experiments performed by Dr. Crile, of Cleveland, the condition present in shock seems to be due to exhaustion of the center that continuously sends out vasoconstrictor impulses. The condition results in dilatation of the blood vessels, particularly the arterioles, thus making greater space for the given quantity of fluid to fill and thus producing low pressure which gives the clinical symptoms of shock. We must learn to distinguish between shock and collapse because in some respects the treatment is different. Crile has proven that shock is due to exhaustion of vasoconstrictor center. For example, any trauma involving a sensory nerve, if not too great, will produce a rise in blood pressure by stimulating the vasoconstrictor center, and causing it to send out more active vasoconstrictor impulses. Now follow up this injury with a second injury. Again the pressure rises, and again after a third injury, and so on, but each time the pressure rises to a less and less extent. Finally a stage is reached when no stimulation will cause reaction. This is exhaustion of the vasomotor center, or shock.

In collapse, stimulation of the vasomotor center will produce a response. Collapse thus differs from shock in that it is only a temporary suspension of the vasoconstrictor center. This may be illustrated by fainting, from violent mental impressions or from a sudden loss of a large quantity of blood. If in fainting the center is stimulated by dashing cold water on the face, by injections of strychnia or ammonia, the center generally will respond and in a comparatively short time act normally.

The causes of shock are anything that produces over-stimulation and consequent exhaustion of the vasoconstrictor center. Personal idiosyncrasy comes into play largely. Some individuals have more resisting power than others. Anything which tends to weaken the general resistance of the body also tends to weaken the resistance of the vasomotor center. A patient who is nervous and apprehensive about an operation is more liable to suffer from shock than one who takes things coolly. Unnecessary exposure to draughts during an operation or drenching the patient for long periods with solutions will tend to weaken the resistance and so predispose to shock; damp towels, unnecessary exposure of legs, arms or trunk act in same way. Organs that are well supplied with sensory nerves, as the ovary or the testicle, when injured, produce shock more readily than others. The immediate cause of surgical shock is some chemical or mechanical trauma to the sensory nerves.

The predisposing causes of collapse are practically the same as those of shock. But the direct causes may differ. Sudden loss of blood may cause surgical collapse. A severe injury to a highly nervous organ may send such sudden and overwhelming impulses to the vasomotor center as to produce temporary suspension of its function. While a small hemorrhage, extending over quite a period, is an active cause of both shock and collapse, a sudden severe loss is more liable to be followed by collapse. Collapse was very frequently seen in the days of preanesthetic surgery, when an operation was quickly performed with but little regard for immediate hemostasis.

The symptoms of shock are due to malnutrition of the vital centers resulting from lowered blood pressure. The skin is cold and pale. There are beads of sweat on the forehead, there is rapid shallow breathing, the pupils are dilated and the pulse is weak, thready and running. If after an operation the patient is restless, is acutely conscious of everything about, has a cold, clammy and pale skin, a sub-normal temperature, the diagnosis of shock is made easily.

The symptoms of collapse, such as pallor of the skin, weak, rapid pulse, and subnormal temperature, are identical with those of shock. A Tallquist hemoglobin test takes but two to three minutes and may help in making a diagnosis of hemorrhage. In collapse the symptoms usually come on suddenly, while in shock they appear gradually. It is usual to have unconsciousness or delirium in collapse, but not in

shock. The history is of great importance, that is, whether the condition which is present is due to sudden loss of blood, to intense violence upon some highly organized organ, or to trauma extending over some period of time.

The treatment of surgical shock and collapse should be very largely by prophylaxis. The anesthetizer should give as little anesthetic as possible. In certain brain and abdominal cases the operator and the anesthetist should work together, the depth of the narcosis increasing and diminishing as indicated by the operative manipulations. Small amounts of the anesthetic are needed except in abdominal cases, liver and stomach cases and certain brain and eye cases. If the operator is unconsciously and unnecessarily handling highly organized parts, especially intestines, the narcosis should be deeper and the operator's attention called to the fact. All are familiar with partial or complete post-operative paralysis of the intestines due to too much handling even with rubber gloves or gauze, and with the difficulty of overcoming this. Fortunately, nose, throat and ear operators do not have these delicate sensory parts to handle excepting the larynx as in bronchoscopy, thus the patient has a very slight amount of anesthetic, and shock in these cases is practically unheard of. The anesthetist should notify the nurse to prevent any unnecessary exposure of the body, to keep up the external heat, but not overdo it. The mental apprehension and fear of the patient should be talked away. A long-continued Trendelenburg position, by throwing the abdominal contents against the diaphragm, mechanically retards the heart and so should be avoided. In line of preventive measures the "nerve-blocking" procedure of Crile should be used to lessen the shock, when operating on an extremity. As the shock impulses go through the sensory nerves, if these nerves can be blocked, the shock impulses may be cut off, so that if then the large nerve trunks are cut down on after anesthesia and are injected with 4-10 minims of 4% cocaine, the shock is slight.

Drug treatment: When the shock features decidedly predominate, I agree with Crile and Horsley that no drug is of any use except, possibly, adrenalin. Hypodermic stimulants are contra-indicated. There can be nothing done which will so augment shock and diminish the chances of recovery for the patient as to give any of the nitrite group (amyl nitrite, nitroglycerin, sodium nitrite), remedies which are often used. They are distinctly vasodilators, and what is needed is high pressure, whereas the dilators give low pressure, the important feature of shock. Probably some cases that would have recovered without treatment have proved fatal on account of such medication.

You may say that strychnia and the other stimulants give inhibition and high pressure through vasoconstriction, but remember that in shock there is a paralysis of the vasoconstrictor center and that this is caused by too

frequent stimulation. Strychnia stimulates the center exactly the same as mechanical and chemical causes, and by giving it, you try to stimulate a center already exhausted. This is practically sending in the same kind of impulses as produced the shock originally.

Adrenalin is the only drug to be used in this condition. It should be given with saline solution by intravenous infusion. The proportions of adrenalin are 1 1000 solution, one part in 200,000 parts of saline solution. Give it slowly and at 110-115° F. The favorable action of adrenalin in shock is due to the fact that it acts chiefly on the muscles and the local nerve apparatus of the vessels, and not on the vasoconstrictor center which so badly needs rest, thus causing increased blood pressure. Salt solution when alone, given intravenously under the skin or by rectum, is of little or no benefit in cases of shock as it does not raise the blood pressure. All other stimulating drugs, as strychnia, are out of the question for the same reason. Digitalis can be ruled out if for no other reason, for its slowness of action.

In collapse, drugs may be employed with advantage because the vasomotor center needs and can take stimulation to bring it to its proper condition. Strychnia may be used here. Alcohol is of some value in surgical collapse, but its stimulating effect is due to the chemical irritation which it causes. Why use drugs in collapse when cold water on the face, ammonia fumes, artificial respiration will do the work as well and quicker? Salt solution is indicated if the collapse is due to loss of blood. When shock and collapse are combined, the outlook is unfavorable, but treatment should be along the lines of shock.

Rhythmic traction of the heart, by the hand in the abdomen and pressing against diaphragm, should be tried in desperate cases.

To sum up, I think that in cases of shock or collapse during operations drugs are used too freely and without a clear understanding of the reasons why they are given.

In etherizing give as little anesthetic as possible. If an emergency arises find out what it is due to. In collapse due to hemorrhage give saline solution, in shock give no drugs hypodermically, but put adrenalin and salt solution into a vein.

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At the annual commencement exercises of Johns Hopkins University a class of 51 new graduates. Several members of the class were women. *Jour. A. M. A.*

Clinical Department.

DEPARTMENT FOR DISEASES OF THE THROAT,
MASSACHUSETTS GENERAL HOSPITAL.

CLINICAL MEETINGS JAN. 31 AND FEB. 28, 1906.

DISCUSSION ON THE TREATMENT OF SYPHILIS.

General Treatment.—DR. J. T. BOWEN: Iodide of potash should be given where there is a definite local lesion occurring after the early stages. It has no action on the virus of the disease. Mercury is a specific; that is, it has a specific action upon the virus. These two drugs have each its definite indication, and it is seldom necessary or advisable to use them both at the same time. Their combined use, the so-called mixed treatment, as a routine method of treating syphilis is unscientific and is liable to confuse the proper use of the essential drug. No one should treat syphilis until a definite diagnosis can be made. In the early stages this generally means the appearance of the roseola, macula or mucous patches, when mercury is indicated. If after a year or more a local lesion arises, something breaks down, then iodide is indicated. This acts quickly upon the local lesion, and this action is not hastened by giving mercury at the same time. After the local lesions are healed, then a thorough course of mercury should be begun. But if during a course of treatment with injections a local lesion arises indicating iodide, this may be given at the same time. It is seldom necessary to give more than ten grains of iodide of potash three times a day for any lesion of the skin or mucous membrane. This does not apply to late lesions of the nervous system.

The most effective method which I have found for giving mercury is by injections. The subcutaneous method is much used abroad and is probably equally effective if properly done, especially if the bichloride is used. The insoluble salts are liable to cause local trouble.

DR. J. P. CRILE: If the disease should appear some years after it had been acquired and the patient had never been treated, what should be the treatment?

DR. BOWEN: First iodide, then mercury.

DR. CRILE: When should both be given?

DR. BOWEN: In a precocious case, as when a deep lesion appears the first year.

DR. F. C. CONN: In an old case in which a gummy develops would it not save time to begin mercury with the iodide?

DR. BOWEN: Possibly, but the separate indications are distinct.

DR. C. J. WARD: I have seen good results on the skin by local injections. Might not that be useful on mucous membrane?

DR. CONN: On the tongue possibly. It would be difficult to apply to the pharynx. Is the objection to giving both drugs absent for a year or a year and a half?

DR. BOWEN: Mercury soon fails to have a better effect later if it has not been given earlier. With the exception of late gummy disease, iodide is preferred to give iodide when mercury is indicated.

DR. WARD: I have given with good results. If iodide is given when mercury is indicated, the patient becomes used to it, and has to give a large amount of local lesions to purify the system. I do not know if it is better to omit everything for a year and then start again.

DR. D. C. GREEN: Should iodide be omitted when the local lesion is healed?

DR. WARD: Certainly. The iodide does not cure

the disease. But in old cases it may be well sometimes to give iodide as there may be unscen lesions, as of the arteries.

DR. A. COOLIDGE, JR.: In old cases after the local lesions have disappeared under iodide, is it not better to give mercury whether the patient has been treated before or not?

DR. BOWEN: Certainly; but it is often difficult to keep the patient at it. The iodide does not ward off subsequent attacks. We do not know how mercury acts upon the virus of the disease, and it seems to become less effective as the disease becomes older.

DR. COOLIDGE: If it becomes possible to diagnose syphilis positively at the time of the chancre, by the presence of the spirocheta, would it be desirable to begin treatment without waiting for secondary symptoms?

DR. BOWEN: Decidedly, begin at it once.

It has been said, and my experience is the same, that extra genital chancre is more likely to be followed by severe and obstinate late symptoms, nervous and otherwise. There are many cases with undoubted late lesions, where the early lesions have entirely escaped notice.

DR. COOLIDGE: I have for some years only seldom given iodide and mercury at the same time. Ten grains of iodide of potash three times a day is in most cases a sufficient dose to heal late deep-seated lesions in the nose and throat with a rapidity and thoroughness which is one of the wonders of medicine. A great objection to combining the two drugs is the difficulty of regulating the dosage, where the mixture is not well tolerated by the patient. Either of them may produce accidental effects which makes its use difficult to regulate, and the useful one should not be hampered by the poisonous effects of the other.

Local Treatment. — DR. COOLIDGE: In treating the superficial lesions of the fauces and mouth, which occur especially in the earlier stages of syphilis, we should carefully distinguish those appearances which are due solely to the disease, from those which are caused by a local sepsis engrafted upon the mucous patch. I think that we may say that the syphilitic patch itself is seldom painful, nor of foul odor, and that it is not helped by local irritating nor otherwise energetic treatment. But this patch may become infected, as may any other lesion which weakens the epithelium of the mucous membrane, by a variety of micro-organisms which infest the mouth and throat, and in almost all cases it is this local infection which demands local treatment. Treatment should, therefore, be directed towards cleansing the surface and preventing as far as possible the growth of micro-organisms, but anything which tends to injure normal mucous membrane or otherwise weaken its natural protective power should be carefully avoided. Local applications should be made to diseased areas only, and these should never be strong enough to destroy underlying living tissue. A mouth wash and gargle or spray should then be used, as cleansing as possible without being irritating.

If there is a pseudo-membrane overlying the diseased areas, these may be wiped clean and painted with a solution of chromium tri-oxide or nitrate of silver, of a strength sufficient to penetrate superficially, not to cauterize. For a wash to be used frequently by the patient, solutions of borax or boric acid, peroxide of hydrogen or some alkaline and aromatic solution may be given.

The patient is generally taking mercury at this stage and the question often arises whether the local condition is in part due to this drug and whether this should be temporarily stopped. Unless there is tenderness

of the gums or other distinct signs of mercurial poisoning, I think it is better to try local treatment and not to stop the general treatment unless the local trouble proves obstinate.

For the typical mucous patch, which is superficial, not covered with a white pseudo-membrane and seldom painful, local applications are not needed. A cleansing wash is, of course, always desirable. The deeper infiltrations as seen especially on the tongue require constitutional rather than local treatment, but these seem often to do well under a solution of chromium tri-oxide, painted so as to discolor the tissue, but not to the point of leaving an ulcer.

For the late deeply infiltrating and ulcerating gummatous lesions local applications can seldom be applied with advantage, although it may be necessary to remove necrotic tissue. These lesions are generally accompanied by surprisingly little pain or secondary sepsis. They fortunately yield very quickly to iodide of potash internally.

DR. CLARK: I should like to ask what strength of chromic acid solution is used.

DR. COBB: I have been looking up some of the older authorities on syphilis in order to see what changes have taken place in local treatment. Nitrate of silver, chromic acid and several other caustics were in use then as now. More powerful caustics gave very disagreeable pain, lasting many hours.

In order to test the efficiency of local treatment I have painted one side, in cases of bilateral efflorescence of mucous patches and left the other untouched, with the result that much greater improvement in the locally treated side was noticed at the next visit.

DR. J. L. GOODALE: I think chromic acid is of more value than an antiseptic mouth wash. When a mouth wash is used and nothing else, the mucous patches frequently get into an indolent condition, and have a pale, flabby appearance. They respond very readily to chromic acid, and I think 50% is as good as a stronger solution. I have found that 50% or weaker solutions have a selective action on the eroded membrane. Where there is even a very superficial erosion the acid will give rise to a yellowish patch which stands out very distinctly against the normal mucous membrane of the vicinity which is not stained.

DR. H. P. MOSHER: In late syphilis after all other manifestations have long since cleared up, superficial ulcerations often alternating with patches of leukoplakia persistently recur at the sides and the tip of the tongue. The slightest irritation brings them back. They worry the patient because he thinks that the disease is still active, they worry the physician because he cannot cure them. I have been accustomed to use mild solutions of chromic acid on them. At times I have used almost pure chromic acid.

DR. COOLIDGE: In regard to Dr. Clark's question, I have used from 10 to 50% solution in water. The proper strength to use is the one which is strong enough to take hold of the diseased part, and not to destroy the normal epithelium.

PAPILLOMA OF THE LARYNX.

DR. J. P. CLARK showed a case of papilloma of the larynx in a boy ten years old. Tracheotomy had been done two years previously, and the tube was still in and to be kept in until the period of active growth of the papilloma was over or until the boy is old enough to allow periodic intra-laryngeal removal under cocaine if necessary. The boy comes in at stated times for observation. An attempt will be made this spring to remove what remains of the papilloma through the Kirstein autoscope, if the appearance of the growth seems to warrant it.

LATERAL DEFLECTION OF THE NASAL BONES.

Dr. A. COOLIDGE, JR.: A case of marked deflection of the nasal bones to the right corrected by Dr. Mosher's method.¹ An obstructing deviation of the septum had been previously corrected by the submucous operation, with good results. Under ether a short incision was made through the skin opposite the lower part of the suture between the nasal bone and nasal process on each side, the nasal bones cut with a narrow chisel along this line and across their base, below the attachments to the frontal. The skin is so movable that the nasal bones may be chiseled without injuring the skin except for the two small incisions corresponding to the breadth of the chisel. These leave no noticeable scar. It is generally necessary to break portions of the nasal processes also, to fit the nasal bones in their new position.

SUBCUTANEOUS CORRECTION OF ROMAN NOSE.

Dr. D. C. GREEN: As the result of periostitis following trauma this patient had a marked Roman nose. The scar which is present was also the result of the accident. The operation for correcting the deformity was as follows: An incision was made within the nose through the mucous membrane over the lower edge of the left nasal bone. The nasal bone was freed from the skin above and the mucous membrane below and made to present the same as the cartilage of the septum is made to present in submucous resection. Both bones were treated in this way. Especial attention was given to the skin over the deformity. When everything was free a median strip including the deformity and a bit of the septum under it was taken out, leaving a gap. Then each nasal bone was chiseled free along its outer border and the bones pressed together so that they met again in the median line without deformity. The bones stood in place so readily that no splint was necessary. The profile of the girl's nose to-day is straight.

REMOVAL OF THE TONSILS FOR RHEUMATISM.

Dr. H. P. MOSHER: This patient, a girl about twenty-two, has had repeated attacks of articular rheumatism. The x-ray plates show distinct changes in one wrist. Along with the rheumatism the patient has had recurring attacks of bilateral tonsillitis. The tonsils were thoroughly removed hoping that they might be the portal of entry for the infection. They were of moderate size and of the so-called non-draining variety. The immediate effect of the operation was to precipitate a fresh attack of rheumatism. On section the tonsils showed what they show in most of these cases, that is, but little—simply here and there evidences of chronic inflammation about some of the crypts.

A CASE OF TURBINOMY.

Dr. G. H. POWERS, JR.: In this case the lower turbinates almost totally obstructed the nose. I trimmed the turbinates with scissors cutting a strip of mucous membrane about 1 inch wide from end to end. It is only two days since the operation so there is still oozing. There was very little bleeding. In about five days healing will be complete. The case shows how little reaction you ordinarily get. Turbinotomy seems to me the most safe method of reducing the size of large turbinates. One or more strips may be taken from a turbinate according to demands of individual cases.

OGSTON-LUC OPERATION.

Dr. J. P. CLARK: A case of frontal sinus empyema operated on three years ago by the Ogston-Luc method. The empyema has been entirely cured by the operation. The interesting point in the case is the absolute lack of visible scar. Even on close inspection it is difficult to find any external traces of the operation.

BULLO'S MIDDLE TURBINATE.

Dr. H. P. MOSHER: The patient had a large, cellular, middle turbinate which before operation reached nearly to the inferior meatus. In 90% of cases the middle turbinate has one or more cells. It is a fairly common anatomical variation to have the middle turbinate so large from the overgrowth of the cells in it, that it not only obstructs the middle meatus but presents at the vestibule. In beginning the treatment of disease in the ethmoid region it is essential to know the size and condition of the related sinuses. The x-ray will give this information. For instance, in this case, the plates showed that the frontal sinus did not reach the brow but had remained little developed in the ethmoid labyrinth. Had there been pus the operator would learn at once from this finding that the frontal sinus need not be considered.

A CASE OF ACUTE INFLAMMATION OF THE LEFT FRONTAL SINUS, ETHMOID LABYRINTH AND ANTRUM.

Dr. Mosher: At the present time the patient is free from all symptoms. When he came to the hospital six weeks ago there was pus in the middle meatus and he had the pain of a general left-sided sinusitis. The plates showed that the frontal, the ethmoid region and the antrum were opaque as compared with the other side, thus confirming the clinical diagnosis. The usual treatment, the removal of the anterior end of the middle turbinate and washing out the antrum speedily cleared up the pain and the discharge.

KILIAN'S OPERATION FOR EMPYEMA OF THE FRONTAL SINUS.

Dr. Mosher: This patient gave a history of left-sided nasal discharge of pus with pain over the left antrum and the left frontal for one year. X-ray plates which were taken one month before the patient's turn came round for entering the hospital showed that the whole left side was opaque. On the strength of this and because the frontal was small, and, further, because I had satisfied myself on previous cases that the Kilian operation gives no deformity in a small sinus beyond the scar, I performed on this man what might be called an exploratory Kilian operation. The anterior internal angle of the floor of the frontal sinus had narrowed away. There was no pus in the sinus and no pus was found in the ethmoid cells. Therefore, the question came up whether the pus had drained away between the time that the plates were taken and the operation or were the plates unreliable. In three other cases which gave the same x-ray pictures as this case I found on operating pus in the frontal and ethmoid. More experience is needed on this point. The patient has no deformity and the greater part of the scar is hidden by the eyebrow.

The arch of the palate was very high and the uvula was high also and much retracted. Owing to this I could not get into the antrum except at the top under the lower ram of the orbit. In doing this the inferior orbital artery was injured and gave annoying bleeding. The operation was finished by clearing the antrum of pus and entering it, and making a larger opening up to the inferior meatus from the antrum into the nose. The subsequent history of the case has shown that the

¹ Laryngoscope, January, 1905.

deep alveolar prolongation of the antrum caused by the high arch makes the opening into the inferior meatus drain poorly. For this reason the fistula in the canine fossa will be slow in closing.

DISCUSSION.

DR. COOLIDGE: There is great need that we should know more than we do now about the etiology of empyema of the frontal sinus, in order that we may attack it intelligently. In the case of the antrum we are sometimes able to find the cause of an empyema. There may be a foreign body in it, or a source of pus in connection with a tooth, or tooth socket, or the antrum may be acting as a reservoir of pus from the ethmoid or frontal. We seldom know anything about the cause of pus in the frontal. If in any case it arises from one focus, as it sometimes does in the antrum, it could probably be cured by attacking that focus, with a less extensive operation and with more certainty of relief than by blindly opening the whole sinus and removing as much as we can remove. At least it would be of great help in the choice of an operation.

DR. COBB: I can heartily indorse Dr. Coolidge's remarks. We know from Dr. C. G. Coakley's experience that diseased bone is seldom found in the frontal sinus, and it is a matter of common knowledge that the antrum seldom contains sequestra. Of the ethmoid we know less, but we do know that curettage of the cells and breaking down of bone which contains foul-smelling pus has more than once resulted in complete cure of the ethmoid, and, without additional treatment, of the antrum as well. Can we draw the conclusion that the ethmoid is the center from which antrum and frontal are infected? Until the pathology of the ethmoid is better understood, perhaps not, but the possibility is certainly worthy of consideration.

A PRELIMINARY REPORT ON THE POST-OPERATIVE RESULTS OF ADENOIDS AND TONSILS.

DR. I. D. KERR: Of 142 cases operated upon at this hospital during the past six months for adenoids and tonsils, I find that 7% more occur among males than in females, and that the average age operated upon is seven and one-half years.

The general condition of the patient was found to be good in 58% of the cases; fair in 34%; poor in 21%. Open mouths were found in 72%; high arches in 53%; crowded teeth in 26%; deflected septa in 14%. The tonsils were large in 46% of the cases; moderately large in 33%. Adenoids present and large in 85%.

The principal reasons for which these cases were called to notice and referred for operation were:

Mouth breathing in 61 cases; difficult breathing in 20 cases; enlarged tonsils in 19; frequent tonsillitis 11; cervical adenitis, 13; nasal discharge, 3; catarrhal laryngitis, 2; earache, 2; impediment in speech, 2; cough, 1.

In these 142 cases, it was found before operation that mouth breathing was a prominent symptom in 78% cases,—two thirds of these cases being constant mouth breathers while one third were periodic mouth breathers.

By operation 96% of these cases have been benefited, mouth breathing persisting in only 4% of the cases.

Snoring was found present in 72%; operation shows a decrease in this symptom to 4%. Restlessness at night, present in 68%; after operation present in only 1%. Recurrent colds, 82%; after operation, 81%. Cough, 16%; after operation, 17%.

Euresthesia was present in 7% of the cases and persisted in 2% of the cases after operation.

Deafness, found in 32%; after operation, 6%. Earache 26%; after operation, 13%.

In 13 cases of cervical adenitis, operation was followed by a marked diminution in the size of the glands in all but one case and in this case the glands remained the same size.

There were 3 cases of cervical adenitis reported as following the operation and 5 cases of otitis media.

Three cases of discharge from the middle ear before operation are reported as clearing up immediately after the operation.

Of 3 cases of dullness at school, 1 shows a marked improvement, 1 a slight improvement and the third none at all.

Of 3 cases of impediment in speech, one has shown much improvement.

One case of asthma reports much improvement following the removal of large tonsils and adenoid.

Four cases of chronic bronchitis have been greatly improved by operation.

Two cases of catarrhal laryngitis show improvement. One case of rheumatism shows no improvement in this symptom after removal of tonsils.

These cases have all been seen once or twice, from two weeks to six months after the operation.

The improvement in some has been so rapid that of 107 cases seen for the first time within two weeks following the operation, over one third have shown an entire subsidence of all the symptoms.

In conclusion, I think the vast majority of the cases operated upon for adenoids and tonsils show a marked improvement following the operation. Their general condition is improved, their breathing easier, the appetite increased; they are less restless and less nervous; snoring has ceased and sleeping is much improved.

Children appear brighter, talk more distinctly and seem to take more active interest in their school work.

Medical Progress.

RECENT PROGRESS IN OBSTETRICS.

BY W. L. BURRAGE, M.D.

PYELONEPHRITIS IN PREGNANCY.

ERNST RUPPANNER¹ reviews the two factors which are necessary for the production of a pyelonephritis, a bacterium which can produce inflammation and soil favorable for its growth. The bacillus coli communis is the common cause and the streptococcus and the staphylococcus may also act in this way. The infection generally comes from the bladder, and pressure on the ureter by the pregnant uterus is a favoring cause because of the trauma which is inflicted, also the stasis of the urinary current caused by the closure of the lumen of the ureter. Pressure on the right ureter is more frequent and right pyelonephritis is more common. Infection may come also from the blood or from the bowel contents. Previously diseased kidneys are more prone to pyelonephritis than healthy ones.

The disease usually begins during the middle months of pregnancy. It may be manifest with chills and fever and much pain, a sudden attack, or it may come on gradually. There may be

¹ Münchener medicinische Wochenschrift, No. 6, 1906, p. 254.

remissions, when symptoms are absent. Frequency of micturition is a constant symptom, whether there is cystitis or not. The urine is acid, with a slight trace of albumin, a little pus, blood, calcic oxalate crystals and bacteria, but no casts until the later stages of the disease. The kidney affected is tender to pressure and there is muscular rigidity, but no tumor can be felt in a majority of cases. The life of the mother or child is not directly jeopardized and the condition of the kidney improves after delivery. In 20 per cent. of his 91 cases, Cathala noted that spontaneous delivery took place. The author had this issue in one of his own cases at the Basel City Hospital for Women.

The best treatment in most cases is rest in bed in the horizontal position, as under these conditions the uterus does not press so deeply into the pelvis.

For the purpose of disinfecting the urine, the author obtained the best results from the administration of urotropin and salol. He saw, also, good effects from helmitol and aspirin; when there is cystitis, irrigation of the bladder is called for. Alkaline mineral waters are useful. Cases are reported in the literature in which artificial delivery was necessary; this must be a rare occurrence. Surgical interference in pyelonephritis of pregnancy is limited to an occasional nephrotomy. Pregnancy is, however, no longer a contra-indication to operations on the kidney.

RESEARCHES ON SYPHILIS OF THE PLACENTA.

V. Wallich and C. Levaditi² having made microscopic studies of the placenta in cases of syphilis, come to the conclusion that, from the anatomical-pathological point of view, spirochaete have been found in a majority of cases in the fetal portion of the placenta, and that rare parasites have been distinguished in the maternal portion of the placenta, it being impossible to say whether the latter micro-organisms penetrated into the placenta before or after delivery. The spirochaete have a perivascular arrangement, which is comparable to the location of the parasites found in the organs of the new-born subjects of hereditary syphilis, and in chancre. From the clinical point of view, the spirochaete have been found in the placenta only in the cases where there were evidences of syphilis in the fetus. Therefore, it is difficult to diagnose from a histological examination of the placenta with reference to the presence or absence of spirochaete, syphilis of the parents, or to make a prognosis as to the future health of the child.

THE PHYSIOLOGY OF UTERINE CONTRACTIONS.

E. M. Kurdinowsky¹ reports from the physiological laboratory of Professor Geyle of Zurich extensive observations which he has made upon the contractile functions of the uterine muscle. His conclusions are as follows: (1) Heat and cold

are the most constant and the most vigorous of the stimuli to uterine contractions, more especially sudden changes of temperature. (2) Thermic stimuli produce the same effect in their different forms, namely, strong contractions of the uterine muscle becoming tetanic in character; moist heat being more effective than dry. (3) Cold has a more powerful effect than heat and the contractions are of a sharper and more tetanic character, and tetanus of the uterus is more common after stimulation by cold than by heat. (4) Increase in the temperature of the blood increases the contractile activity of the uterus.

In the same number of the *Archiv*, Kurdinowsky gives the results of his experiments to settle the question of the influence of asphyxia and anemia upon uterine contraction. He considers that asphyxia lessens to a marked degree the reflex and contractile excitability of the uterine muscle. The intestines of animals contracted energetically when, under the same conditions, there was no effect on the uterus.

In the case of pregnant animals the same result was noted in anemia. Where the uterus was deprived of a part of its blood the uterine muscle failed to respond to stimuli. Variations in the blood pressure in the same individual seemed to have no effect on the uterine contractions.

THE VALUE OF ESTIMATING THE HEMOGLOBIN IN THE BLOOD OF PREGNANT WOMEN.

L. Devraigne¹ calls attention to the importance of investigating the condition of the blood in practical obstetrics, with special reference to the cases which have lost blood through placenta previa or other causes. He uses the apparatus of Gowers-Sahli and does not consider that a laboratory is necessary. From a clinical point of view the percentage of hemoglobin is more important than the number of the blood corpuscles. Many analyses of the blood in different abnormal conditions of pregnancy are given by the author. A low percentage of hemoglobin calls for the interruption of pregnancy.

The technique of the examination is simple.

DISENGAGEMENT OF THE ARM IN VERSION.

Apfelstedt² of Berlin, dwells on the need of careful manipulation of the child's arm during version to avoid delivering a dead child or one with a broken arm. In breech deliveries, to prevent the extension of the arms, he operates as follows: The left hand is introduced into the vagina and the right is placed on the fundus uteri externally. The membranes are ruptured and the left hand is passed over the nearest shoulder of the child, along the forearm to the elbow and seizes the arm so that the elbow and forearm lie in the palm of the operator's hand. The child's arm is then brought down, extended over the hip into the vagina until it reaches a position of abduction. After a brief interval of rest the corresponding foot is seized and brought

¹ *Annales de Gynécologie et d'Obstétrique*, February, 1906, 65.

² *Archiv für Gynäkologie*, 1905, Bd. LXXX, Hft. 2.

¹ *Chirurgische Monat*, 1906.

² *Berliner klinische Wochenschrift*, No. 50, p. 1557, 1905.

into the vagina, the right hand on the outside all the time aiding in the manipulations. The rest of the delivery is accomplished in the usual way.

PUERPERAL ECLAMPSIA.

Under this heading John F. Moran⁶ gives the statistics of the 28 cases of eclampsia occurring in the last 2,035 confinements in the Columbia Hospital of Washington, D. C. The proportion of eclampsia was therefore one in every 72 confinements. Fifty per cent were black; the ages ranged from forty-four to sixteen; primiparae, 21; multiparae, 5; not given, 2. Convulsions occurred antepartum in 57%, intrapartum, 25%; post-mortem, 10.5%; not given, 7%; greatest number of convulsions, 56; earliest convulsions at five months' gestation; latest, tenth day after labor. Cephalic presentation in 26, breech in one case.

Prenatal symptoms were present in 23. Artificial delivery was resorted to in 15, natural delivery in 13, abdominal Cesarean section in 1, vaginal Cesarean section and forceps in 2, induction of labor and forceps in 1, manual delivery of breech in 1 and forceps in 10 cases. Venesection was practiced in two instances.

Maternal mortality, 7; infants died within three days, 7; stillborn, 7; unknown, 1.

The author is firmly convinced that the practice of giving anesthetics continuously or intermittently, extending over a period of some hours, adds to the inherent gravity of the disease and is largely responsible for the high mortality. He prefers to use morphine hypodermically on account of the certainty of dosage and rapidity of action. He also uses chloral hydrate, veratrum viride, nitroglycerin and venesection to control the convulsions.

Careful observation of pregnant patients is advised, for the purpose of becoming familiar with the hepatic and renal functions. In the case of the patients coming to the hospital there were very few data to be obtained as to these functions.

HEBOTOMY OR PUBIOTOMY.

A. Dührssen⁷ is favorably inclined toward hebotomy (sawing the ramus of the pubes on either side of the median line). He has collected 115 cases with 6 deaths reported in the literature. He presents a case, giving a photograph of the external genitalia and an x-ray plate taken fourteen days after delivery. There was a scar in the labium majus and moderate separation of the fragments of the pubic bone with callus formation. He considers the operation simple and advises against suturing the wound in the soft parts. Version is preferred to forceps after hebotomy and he counsels anticipating the actual beginning of labor by the operation lest delay destroy the life of the child.

Five articles on the subject of extramedian symphysectomy appear in the *Zentralblatt für*

Gynäkologie for Feb. 24, 1906. Max Henkel of Othausen's clinic reports a case of contracted pelvis and central placenta previa; pubiotomy or hebotomy, vaginal Cesarean section, version and extraction.

He thinks that hebotomy should not be performed when the true conjugate diameter is 6.75 cm. or less with a flat pelvis, or 7.5 cm. with a generally contracted pelvis. The operation is easy and simple, but should be performed only in selected cases. If a woman with an abnormally small pelvis has been in labor for a long time and has a temperature, he advises perforation of the living child, even in the case of a primipara, rather than sawing the os pubis, as the danger of secondary injury to the great veins and the bladder which lie behind the pubic bone, is considerable. He thinks the operation is contra-indicated in eclampsia and should not be done by the general practitioner, as severe hemorrhage and other complications have occurred, even in the hands of experienced operators. Henkel's operation was successful and required just thirteen minutes to perform, including the suture of the uterus. The patient had a contracted pelvis, the true conjugate measuring 7.75 to 8 cm. The previous pregnancies had been terminated by perforation of the fetus or abortion. A living child was obtained and there was no excessive hemorrhage.

Krämer, of Giessen, contributes illustrative cases to show that hebotomy can be used to supplement the other methods of artificial delivery, as the Waleher pendulous pelvis position, high forceps, etc. He gives an x-ray picture of Rosenfeld's experiments with hebotomy on the cadaver, showing great separation of the fragments of the pubic bone, the external portion being raised by contraction of the rectus muscle.

Seeligmann, of Hamburg, discusses the preferable technic, and advises that the operation be performed in a private house and that the secondary suture of the pelvic bones should be made thirty hours after the hebotomy, the patient being anesthetized a second time.

F. Jessen reports a case in which the Gigli saw broke during the operation and he was unable to complete it, finishing with a symphysectomy. There was excessive hemorrhage when the point of the saw came through the labium majus. It was controlled by suture.

Kannegiesser, of Dresden, attributes his success with hebotomy to his subcutaneous technic. A needle is first introduced from above and worked down behind the os pubis to emerge through the skin of the labium. The Gigli saw is drawn through the wound by a thread attached to the needle. Care is taken not to have the wound in the skin over that in the bone, the skin being drawn to one side.

The same author in another place⁸ reports 21 cases with x-ray photographs taken at varying intervals after operation. There was separation of the bone through the foramen ovale in several cases. Bone formation about the ends of the

⁶ American Journal of Obstetrics, May, 1906.

⁷ Berliner klinische Wochenschrift, No. 49, p. 1521, 1905.

⁸ Archiv für Gynäkologie, Bd. 78, Heft, 1, 1906.

separated fragments of the os pubis was to be noted in some instances at intervals of several months after the hebotomies and a partial callus was seen in one case thirty-one days after. As a rule no bone had formed in the fissures, and separation of the fragments was very considerable as shown by the x-ray plates. Kannegrasser advises that the ends of the bone be brought into apposition and wired at the time of delivery, before the patient is out of ether, unless better results with this operation are obtained.

Reports of Societies.

RHODE ISLAND MEDICAL SOCIETY.

NINETY-FIFTH ANNUAL MEETING.

At a meeting of the Council and House of Delegates, held in Providence, R. I., May 23, 1906, the following were elected officers for the ensuing year:

Christopher F. Barker, Newport, president; Charles V. Chapin, Providence, first vice-president; Frank B. Fuller, Pawtucket, second vice-president; Stephen A. Welch, Providence, secretary; George S. Mathews, Providence, treasurer.

Standing Committee of Arrangements: W. B. Cutts, P. Williams, H. G. Partridge. On Publication: G. D. Hersey, C. M. Golding, G. T. Swarts. On the Library: H. G. Miller, G. D. Hersey, G. W. Porter, G. L. Collins, F. L. Day. Curator: W. J. McEw. On Nomenclature: H. C. Putnam, E. B. Harvey, L. F. C. Garvin. On Legislation: G. T. Swarts, W. F. Gibson, W. L. Munro, C. F. Barker, S. A. Welch. On Building: H. G. Miller, J. W. Mitchell, R. F. Noyes, F. H. Peckham, F. T. Rogers. Auditors: E. B. Harvey, W. A. Risk. On Medical Education: G. T. Swarts, C. V. Chapin, J. M. Peters.

It was voted that the September meeting be held in Woonsocket.

The annual report of the secretary, Dr. Stephen A. Welch, showed that the total membership was 365 of these 329 were resident members, 24 non-resident and 12 honorary.

The annual report of the treasurer, Dr. George S. Mathews, showed that the total receipts for the year were \$1,724.85, and the expenses \$1,687.37, with cash on hand March 1, 1906, amounting to \$340.49.

The reports of the councilors of the district societies showed that each of the local societies had had a prosperous and successful year.

Dr. George D. Hersey for the Library Committee, reported that 295 books had been added during the year and some 400 health reports, the latter the gifts of Drs. C. V. Chapin and G. T. Swarts.

Dr. G. T. Swarts, for the Committee on Medical Legislation, reported that the only medical legislation enacted was an act to regulate the sale of certain narcotics, known as the Anti-Narcotic Bill.

The general session was held in the Truro Hotel, Providence, on Thursday, May 31, 1906.

For the trustees of the Fiske Fund, Dr. Halsey DeWolf reported that the prize of \$250 for the best essay on the "Etiology and Diagnosis of Epidemic Cerebrospinal Meningitis," had been awarded to Dr. Archibald William Fyfe, of New York City.

The subject chosen for the year 1906-07 is "Diet in Typhoid Fever." The prize is \$250.

The subject for 1907-08 is "Has Surgical Treatment Lessened the Mortality from Appendicitis?" The prize is \$200.

For the Trustees of the Chase-Wiggin Fund, Dr. George S. Mathews reported that a prize of \$75 was offered for the best essay on "Tobacco and Its Evil Effects on the System."

Dr. A. L. Stanwood, of Maine, and Dr. F. B. Lund, of Massachusetts, were introduced as delegates.

Dr. Henry Rolf Brown, in behalf of the California Physicians' Relief Fund, spoke of the need of physicians in San Francisco.

A motion to appropriate a sum of money to this fund was referred to the Council who subsequently voted \$100 to this object.

As additional delegates to the meeting of the British Medical Association the president named Drs. George L. Collins, Frank E. Peckham and Stephen A. Welch.

The following papers were read, by Dr. WILLIAM F. BARRY.

THE PHYSIOLOGY AND DISORDERS OF SLEEP.

And by Dr. FRANK E. PECKHAM,

THE TREATMENT OF FRACTURES OF THE NECK AND SHAFT OF THE FEMUR.

The annual address was given by the president, Dr. CHRISTOPHER F. BARKER, on the

PHYSICIAN'S OBLIGATION.

At the annual dinner Dr. Herbert Terry was anniversary chairman.

Addresses were given by Dr. C. F. Barker and Prof. J. Irving Manatt, of Brown University.

Recent Literature.

The Pathology of the Eye. Vols. 1 and 2. By J. HENRIER PARSONS, Assistant Ophthalmic Surgeon, University College Hospital, Curator and Pathologist, Royal London (Moorfields) Ophthalmic Hospital, New York. G. P. Putnam's Sons. 1904-1905.

While for several years there has been a plethora of textbooks on clinical ophthalmology, an adequate textbook in English devoted exclusively to the pathology of the eye has been entirely lacking. In fact it has been only within the past three years, during which the treatises of Greeff and Ginsberg made their appearance, that such a textbook in any language has been available. Although written in English, Parsons's work is more complete than either of the two German ones, a rather unusual circumstance. The author has already shown himself well qualified to deal with his subject on the grounds both of practical experience and critical judgment. The completed work is to consist of four volumes, only the first two of which have appeared. These take up the pathological histology of the various ocular structures, considered separately. The other two volumes are to deal with the general pathology of the eye, that is, with pathological processes involving the eye as a whole, such as glaucoma. The first two volumes follow in a general way the plan of Ginsberg. The normal histology of a part is first reviewed before the pathological changes are considered. The work is profusely illustrated, chiefly with photographs. While the latter are excellent in their way, well

executed drawings would no doubt be more acceptable to many. As the writer himself anticipates, his deductions will not in all cases meet with universal acceptance. However, disputed questions are as a rule discussed sufficiently fully for the reader to draw his own conclusions, and the complete bibliography at the end of each section enables him readily to refer to original sources for further information. Parsons's book will be read with interest by the clinician, and will be of value as a book of reference to the special pathologist. It will also be appreciated by the general pathologist who is occasionally called upon to examine eye specimens and who is, naturally enough, unfamiliar with the recent advances in the special pathology of the eye.

F. H. V.

Surgical Nursing and Principles of Surgery for Nurses. By RUSSELL HOWARD, M.B., M.S. (London), F.R.C.S. (England). Lecturer on Surgical Nursing at the London Hospital, etc., London. Edward Arnold, 1905.

This book of 300 odd pages is based on a series of lectures on surgical nursing, given to the "probationers" at the London Hospital. The author intends to present concisely the principles or essentials on which modern surgical treatment is based, and at the same time enumerate the details important from the nurse's standpoint. That is, to teach the principles which the nurse must understand in order to render the surgeon efficient aid.

The introductory chapters treat of general subjects and some surgical pathology, hemorrhage, shock, asphyxia, burns and scalds; following this the preparation for operations, operative room details, and postoperative treatment. The remaining chapters describe special operations and the special details of the postoperative care concluding with chapters on bandaging, infants and massage.

The impression one receives by reading this volume is, that it is a book, the chief value of which would be to its author's students. For others not familiar with the routine of the London Hospital it will have only a secondary value, for the facts are at times presented in such a way that much must be supplied to make the text complete. For example, in describing intravenous infusion the nurse is simply told to have ready six pints of boiled water. This is rather scanty information for the preparation of a liquid intended to be introduced directly into the blood current, unless the surgeon intends to superintend all the other necessary minutiae, or that the nurse has received, or is to receive, the necessary additional information in some other part of her hospital course.

At times, details of technique which are the work of the surgeon rather than the nurse are described; while sometimes the details necessary to enable her to work intelligently are omitted.

However, one must not think from the above that this book contains nothing of value for, quite the contrary, there are many important

facts scattered through its pages which are concisely and correctly presented, but it is a book having a local value and is not adapted for general use in this country.

The Treatment of Diseases of the Eye. By DR. VICTOR HANKE, of Vienna. Translated by J. HERBERT PARSONS, B.S., D.Sc., F.R.C.S., and GEORGE COATS, M.D., F.R.C.S. London: Hodder and Stoughton. Chicago: W. T. Keener and Co. 1905.

The avowed intention of the author, who is the first assistant of Professor Fuchs, is to supply the general practitioner and student with such hints and indications as may be necessary for the successful treatment of diseases of the eye. The question of diagnosis, differential in particular, has received more than ordinary attention, while description of operative procedure, so frequently found in even the smaller treatises of this class, has been very sensibly omitted, as it was thought better to merely mention briefly such surgical treatment as might be considered advisable, thereby emphasizing the importance of placing matters of operative technique in more practised hands. As it is practically a *résumé* of Professor Fuchs's clinical methods and experience, special workers in this branch of medicine may find its pages worthy of their attention. The translators have followed the original text closely although occasionally they have substituted British pharmacopoeial preparations for the Austrian. There are 214 pages of reading matter, without illustration, supplemented by a good index. It is compact and of convenient size.

A Textbook of Physiology for Medical Students and Physicians. By W. H. HOWELL, Professor of Physiology in the Johns Hopkins University. Pp. 905. Philadelphia and London: W. B. Saunders & Co. 1905.

It is a pleasure to record a publication so scholarly as Professor Howell has produced in this new textbook. Here one finds a work evidently based on an acquaintance with the original sources, and bearing internal evidence that the writer has kept his reading of these sources up to date and has read with careful judgment. The aim of the book is twofold: to present the facts and theories of physiology simply and clearly; and to present, not the whole subject but such part as seems most important. The great mass of physiological literature is thus reduced for the beginner by elimination rather than by condensation. What should be eliminated and what included are questions which different men will decide differently, but from the point of view of a teacher in a medical school it would seem that little fault could be found with Professor Howell's selection. The large number of original illustrations and the frequent references to the experimental sources of the science are features which add the element of authority to the entertaining and lucid exposition which characterizes the book.

THE BOSTON

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THE MASSACHUSETTS MEDICAL SOCIETY AND HOMEOPATHY.

It is a sign of progress that the Massachusetts Medical Society has so far modified its rules of admission that homoeopaths may become members of the society under the same conditions that apply to practitioners of the regular school. The modifications in the by-laws which have rendered this change possible we published in our issue of last week in the official report of the councillors' meeting. Hereafter all persons will be admitted to the Massachusetts Medical Society who can give satisfactory evidence of moral character and an educational equipment sufficient to pass the examination prescribed by the society. Candidates for admission must, however, give proof that they have studied medicine at an authorized medical school recognized by the councillors of the society and have received a diploma from such school. They must also not profess to treat diseases by an exclusive system. If a candidate can satisfactorily meet these requirements, he may hereafter become a member of the Massachusetts Medical Society without question as to his therapeutic theories. The therapeutic question is left absolutely to the individual conscience, and no questions will be asked as to his method of treatment, provided the broader question of non-exclusiveness is met. There are at present eight homoeopathic schools recognized by the councillors of the society, the graduates of which, naturally, owing to the altered by-laws, are candidates for admission to the society.

It follows from the foregoing that no special

insistence will hereafter be laid upon what has come to be known as regular practice. It is felt, and we think properly, that many who call themselves and are regarded as homoeopaths differ in no essential respect in their practice from those who make no profession of exclusiveness. If such practitioners are desirous of joining the Massachusetts Medical Society, the opportunity is now open to them, and no doubt, as time goes on, many will avail themselves of this opportunity. According to the existing law of Massachusetts the state defines what constitutes regular practice, and those who successfully pass the State Board examinations are legally entitled to practice medicine without further question. It has appeared, therefore, to the councillors of the Massachusetts Medical Society that the sharp distinction between so-called regular and homoeopathic practitioners may, with profit, be allowed to lapse to the end that the medical profession may present a more united front.

In relation to the general question we have recently had occasion to say that medicine, both on its practical and theoretical side, should offer a solid front against the encroachments of rampant quackery. Recognizing therefore the somewhat contentious distinction which now exists between practitioners in good standing, the councillors of the Massachusetts Medical Society have felt that progress would be gained by ignoring the differences which have hitherto excluded homoeopathic practitioners and permitting them to join the society under conditions to which we believe no right-minded man can object. This final action was not taken without much discussion and consideration. No doubt there are two sides to the question, and it may well be so long as the homoeopaths cling to a principle of treatment which the great body of scientific men have rejected. The situation, therefore, continues to offer material for argument, but we are convinced that neither side can treat the question in general good will, and much better than the action of the Massachusetts Medical Society.

MEDICAL INSPECTION OF PUBLIC SCHOOLS.

In our issue of May 22, 1906, we have already referred to the efforts of the Massachusetts Medical Society to secure recognition of the regular medical school graduates as medical inspectors of the public schools. In our issue of June 11, 1906, we have reported that the Massachusetts Medical Society has been successful in securing recognition of the regular medical school graduates as medical inspectors of the public schools. In our issue of June 11, 1906, we have reported that the Massachusetts Medical Society has been successful in securing recognition of the regular medical school graduates as medical inspectors of the public schools.

the legislators would be influenced by the many arguments in its favor. It will, perhaps, be remembered that his Excellency, Governor Guild, in his inaugural address under the heading of "School Inspection," called attention to the urgent need of action in this matter. On that occasion he made the following statement:

"The work of the State Board of Education shows satisfactory progress, as usual. I would suggest, however, that you consider legislation contemplating a more general medical inspection of school children, as now practiced in some localities, notably for the discovery of infectious diseases and physical defects. A child may be a dullard at school and a failure in life because of undiscovered defects in eyesight or hearing. There are, to quote one line of work only, children now struggling for education through pain,—ailing little creatures, backward in their lessons, tortured with racking headaches,—who only need relief of a complaining set of nerves by a pair of properly adjusted glasses, to transform them to healthy, happy children, capable of assimilating all the benefits of their school work."

It must be a source of great gratification to all concerned in the furthering of this most excellent bill that it received the signature of the Governor June 20, and, therefore, has now become a law. That this is a step in the right direction cannot for a moment be questioned. It has become a commonplace of observation to say that medicine of the future must be largely prophylactic, and nowhere can this prophylaxis so well be practiced as in our public schools where disease and defect must inevitably early make their appearance. It is furthermore significant that very many affections relating to the eyes, muscular system or to the nervous system are easily remediable, if taken in time. Such medical inspection as is proposed by this bill should not only call attention to the more obvious ailments, which it is intended primarily to correct, but should also, as experience accumulates, do much toward rendering the classification of school children more exact and comprehensive. It will, no doubt, as time goes on, bring to the front many problems which may now be more or less definitely recognized, but which will demand careful study properly to solve, extending over the observation of many cases. The state is certainly to be congratulated upon the passage of this most salutary bill, due in no small measure to the active interest of Governor Guild, as well as of a large number of public spirited citizens who have realized our shortcomings in respect to school inspection.

REPORT OF THE HENRY PHIPPS INSTITUTE.

THE second annual report of the Henry Phipps Institute for the Study and Prevention of Tuberculosis has recently appeared covering the year from Feb. 1, 1904, to Feb. 1, 1905. In spite of the fact that the year's work was carried on in temporary quarters and under great difficulties, the volume before us shows a large amount of extremely careful work, both of a theoretical and practical sort. Many interesting points in this much discussed subject of tuberculosis are brought forward. It has been shown, for example, that the character of the street in which patients live is not a significant determining factor in the development of tuberculosis. Persons living on blind alleys do not present a large percentage of cases under treatment. It appears, however, that those who live in open spaces are less susceptible to the disease than those who live on ordinary streets. It has also been shown that the ratio of black to white tuberculous persons presenting themselves for treatment has decreased during the current year, in spite of the fact that, as generally known, negroes are particularly prone to the disease. This is regarded as an important social problem, inasmuch as the negroes are careless in their habits, uncleanly, and will constitute a menace if not brought under control by strict supervision. Attention is again drawn to the importance of the relationship between alcoholism and tuberculosis. Alcohol has at times been regarded as a preventive of the disease, a matter which may be regarded with some doubt. In any case, the alcohol evil and the tuberculosis problem should be considered together, whatever their exact etiological relation may be. In general, the opening section of the report, written by Dr. L. F. Frick, contains many statistics of value, which naturally will become of increasing significance as other figures from the same standpoint are added, year by year.

An interesting statement regarding the neurological work, under the supervision of Dr. D. J. McCarthy, is given. Notes have also been made of the mental attitude in tuberculosis. It appears from this investigation that the proverbial idea of the hopefulness of the outcome on the part of persons afflicted with the disease is not to be forthwith accepted. It is also reasonable to suppose that the great publicity given to tuberculosis at the present time must have modified the general mental attitude of the individual as well as of the community toward it.

Being better understood, its seriousness is, no doubt, more frequently recognized.

Work of value is being done at the Institute on immunization in tuberculosis. It will be remembered that Prof. Edward Maragliano presented a lecture last year in connection with the Phipps Institute, on the "Specific Therapy of Tuberculosis and Vaccination against the Disease." The claims were made that a specific therapy for tuberculosis is possible and that animals might be immunized against tuberculosis as in other infectious diseases with good reason to hope that this might later be applied to man. As a result of this lecture investigations have been faithfully carried on in this line at the Institute, but without any definite conclusions as yet. Dr. Leonard Pearson, however, reports that work upon the immunization of cattle has been most encouraging. This portion of the report will in general be of much interest to students of tuberculosis, representing as it does recent experimental work along lines which at least give promise of future results.

MEDICAL NOTES.

DEATH OF A PHYSICIAN FROM SLEEPING SICKNESS.—It is reported that Lieutenant Tulloch, one of the physicians accompanying the Commission of the Royal Society to Uganda for the purpose of studying sleeping sickness, died in London, June 20, from the disease, as the result of an accidental inoculation.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON.—For the week ending at noon, June 27, 1906, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 11, scarlatina 32, typhoid fever 12, measles 50, tuberculosis 35, smallpox 0.

The death-rate of the reported deaths for the week ending June 27, 1906, was 15.43.

BOSTON MORTALITY STATISTICS. The total number of deaths reported to the Board of Health for the week ending Saturday, June 24, 1906, was 158, against 201 the corresponding week of last year, showing a decrease of 43 deaths and making the death-rate for the week 13.85. Of this number 84 were males and 74 were females; 155 were white and 3 colored; 84 were born in the United States, 72 in foreign countries and 2 unknown; 30 were of American parentage, 112 of foreign parentage and 16 unknown. The

number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 41 cases and 2 deaths; scarlatina, 11 cases and 2 deaths; typhoid fever, 7 cases and 2 deaths; measles, 55 cases and 1 death; tuberculosis, 41 cases and 28 deaths; smallpox, no cases and no deaths. The deaths from pneumonia were 8, whooping cough 2, heart disease 20, bronchitis 5 and marasmus 3. There were 6 deaths from violent causes. The number of children who died under one year was 21; the number under five years 36. The number of persons who died over sixty years of age was 35. The deaths in public institutions were 51.

There were 2 cases and 2 deaths reported from cerebrospinal meningitis during the week.

HARVARD MEDICAL ALUMNI ASSOCIATION.

The annual meeting of the Harvard Medical Alumni Association was held June 26 at twelve o'clock at the Harvard Medical School. Dr. F. B. Mallory spoke on the future of the new Harvard Medical School, and Dr. Malcolm Storer also addressed the association. As heretofore the association met at Cambridge on Commencement Day.

APPOINTMENT OF PHYSICIANS BY BOSTON SCHOOL COMMITTEE. At a recent meeting of the Boston School Committee the following physicians were appointed to consider the curriculum and hours of the first three grades of the primary school from a medical standpoint: Dr. A. C. Jelly, Dr. J. S. Stone, Dr. L. P. O'Donnell, Dr. G. S. C. Badger, Dr. J. E. Goldthwait, Dr. J. F. Young and Dr. E. P. Joslin.

"THIRD-RAIL EYE." A recent decision of the Massachusetts Supreme Court regarding the so-called "third-rail eye" will probably prove of much importance. Sometime ago suit was brought against the Boston Elevated Railway Company for alleged injury to the eye from a particle of steel coming from the third rail during the passage of a train overhead. After much litigation the Supreme Court has ruled that the original verdict should stand. This evidently opens the way for a series of suits of the same general character.

NEW YORK.

SMALLEST INFANT ON RECORD. The smallest infant on record at Bellevue Hospital, a premature child weighing twelve ounces, was recently received at that institution and placed in an

incubator. Although it was well-formed and seemed to have some chance of surviving, it lived but a day or two.

NEW YORK BAY POLLUTION COMMISSION. — Mayor McClellan has announced his appointment of the members of the New York Bay Pollution Commission created by the recent legislature. The head of the commission is Dr. Daniel Lewis, who, for a number of years, was president of the State Board of Health, and among the other commissioners are Dr. George A. Soper, the well-known sanitary expert, and Prof. Olin H. Landreth, of Union College. It would appear that the best men have been selected for these positions, without any regard to political considerations.

DINNER TO RETIRED POLICE SURGEON. — On June 19 the Board of Police Surgeons gave a complimentary dinner to the recently retired president of the board, Dr. Stephen G. Cook, in recognition of his thirty-four years' faithful service as a police surgeon. The new president, Dr. John J. Quigley, presided, and among those present was the head of the Police Department, General Bingham, who gave interesting medical reminiscences of his army life and told some of his experiences in a Buffalo hospital, where his leg was amputated.

GIFT TO AMERICAN MUSEUM OF NATURAL HISTORY. — The skeleton of the famous race horse *Synsby*, which recently died at the Sheepshead Bay track, will probably be presented to the American Museum of Natural History, New York. It is stated that when the noted English horse, *Ormonde*, was sold to the Argentine Republic, there was a stipulation to the effect that when he died his skeleton should be returned to England as a gift to the British Museum, where it now is; while in America the mounted skeletons of two other famous race horses, *Eclipse* and *Lexington*, are serving science and students of natural history, in the Smithsonian Institution at Washington.

UROTROPIN QUESTIONED. — The mind of the Collector of the Port of New York has been for some time considerably exercised over the matter of hexamethylenaminotetramine, more familiarly known as urotropin. Being convinced that this preparation contains alcohol, he demanded importation duty on the basis of fifty-five cents a pound. The importers, contending that there was no alcohol in it, appealed to the Board of General Appraisers, and the board upheld the collector in his position. The importers then

carried their case to the courts, and Judge Pratt, in the United States Circuit Court, has now, much to their relief, rendered a decision to the effect that the drug does not contain alcohol.

ETHICS OF THE ALLIED PROFESSIONS. — A symposium on the "Ethics of the Allied Professions" was held on June 18, at the New York College of Pharmacy, the medical profession being represented by Dr. Reynold Webb Wilcox, Professor of Medicine in the New York Post-Graduate Medical School, and Drs. F. E. Stewart and John P. Davin, the medical press by Dr. H. Edwin Lewis, the pharmaceutical press by Messrs. Mayo and E. C. Goetting, the pharmacists by Drs. William C. Alpers and William C. Anderson, and the manufacturing chemists by Parke, Davis & Co. and W. H. Schiefflin & Co. In the course of his remarks Professor Wilcox said: "It is a lamentable fact that the young doctor nowadays is relatively less fitted to practice the art of healing than the young doctor of ten years ago. The theoretical work in the medical schools is enormously out of proportion to the practical. The average student, when he comes out of college to practice his profession, knows little or nothing about compounding prescriptions. If he does not become a peddler of Smith's heart tablets or Jones's hypophosphites, he becomes a therapeutic nihilist, and then is surprised when his patients wander off into Christian Science." Dr. Stewart argued for the elimination of the proprietary system, and concluded by saying: "The medical and pharmaceutical professions are certainly allied. They twain should be one flesh, and what God has joined together let no patent medicine man put asunder."

MORTALITY DURING MAY. — The weekly reports of the Health Department show that the mortality in the city during the month of May represented an annual death-rate of 18.53, as against 19.79 in April, and 16.92 in May, 1905. In May of last year, the number of deaths was unusually small. Among the diseases in which there was a decline in fatality were the following: The weekly average of deaths from measles decreased from 51 in April, to 35.5 in May; the weekly average of deaths from influenza, from 8 to 4; from epidemic cerebro-spinal meningitis, from 29.5 to 26.5; from pulmonary tuberculosis, from 182.75 to 177.25; from acute bronchitis, from 31.25 to 22.5; from pneumonia, from 164.5 to 114.25; from bronchopneumonia, from 141 to 107.5; from cancer, from 58.25 to 54; from organic heart diseases, from 117.25 to 101.25; and from Bright's disease

and nephritis, from 127.25 to 121.75. Among the diseases which showed an increased mortality were the following: The weekly average of deaths from scarlet fever increased from 14.75 to 26.25; from diphtheria and croup, from 43 to 47.75; from whooping-cough, from 4 to 5.5; from diarrheal diseases, from 42.75 to 55.5; and from diarrheals under two years of age, from 38.5 to 48.25. During the month there were 5 deaths from smallpox, the largest mortality from this disease reported in any one month for several years. The corrected death-rate, excluding non-residents and infants under one week old, was 17.17.

QUARANTINE REGULATIONS AFFECTING CUBAN PORTS. — On June 23, the new quarantine regulations affecting Cuban ports which have been ordered by Health Officer Doty went into effect. According to these, all passengers on steamships arriving from such ports who are not provided with certificates to the effect that they are immune to yellow fever are to be held for observation until five days have elapsed since their departure from Cuba. Dr. Doty explains that this precaution is taken for the purpose of keeping yellow fever out of the Southern States, as a person with the disease in his system might come from Havana in three days, and, if allowed to land, could, by taking a fast train, be in New Orleans before the expiration of the five-day limit. Passengers on vessels from other ports than Havana, from which the time of passage is five days or longer, will, if they show no signs of infection, be permitted to land after the usual inspection common to all vessels is made at quarantine.

CAMP FOR SICK BABIES. — An out-of-door camp for sick babies is to be started on the bluff extending from 64th to 65th streets on the East River front. John D. Rockefeller has given the use of the land, which adjoins the site of the Rockefeller Institute and will, it is said, contribute largely to the expenses of the undertaking. The camp, which is to be known as the Junior Sea Breeze, will be under the management of the New York Association for Improving the Condition of the Poor, which maintains the Sea Breeze hospital and fresh air resort at Coney Island. There will be accommodations for about one hundred infants in open tents, with porches in front. Three of the tents will be reserved for seriously ill patients, who will remain in them day and night, while in the others the children will be largely cared for by their own mothers during the hours of daylight. It is not likely

that there will ever be enough places at the seashore for all the sick babies of the city in the summer months, and one object of this enterprise is to teach the mothers how to properly care for their infants in hot weather. Among the prominent physicians who will be on the consulting staff of the camp are Health Commissioner Darlington and Drs. John W. Brannan, Henry D. Chapin, W. P. Northrup. The quarters for the nurses will be in the old Schermerhorn mansion, which is still standing on the estate purchased by Mr. Rockefeller for the institute for medical research which bears his name. It is understood that the babies' camp is only a temporary enterprise, which is to be conducted as a demonstration, in the hope that the city will reserve portions of the recreation piers for similar purposes, and that other breathing spaces also will be so utilized.

Miscellany.

CRIMINAL ANTHROPOLOGY AND THUG SKULLS.

At the last meeting of the Royal Society of Edinburgh last week, Sir William Turner, K.C.B., submitted Part 3 of his "Contributions to the Craniology of the People of the Empire of India." Amongst the skulls, of which he exhibited photographs, were specimens of Thugs, who, Sir William explained, made it their business to frequent the great highways of India and become friendly with travellers, with a view to setting upon them and strangling them. They did this with so much care and forethought that no one ever escaped. Large numbers of people disappeared and no one knew what became of them, as the Thugs buried their victims with such secrecy that the burial places could not be discovered. The attention of the Government was at last directed to the matter and the system is now believed to be at an end. A number of the skulls of these Thugs found their way to Edinburgh, several of which had been presented to him. Altogether he had examined 15. This practice was hereditary in families and the people who practised it regarded it as a religious duty — that they were offering sacrifices to the particular goddess they worshipped. They read nowadays in *lashed* and other journals of the "criminal" type of skull. The criminal was believed to have marks on the skull which showed him to be a morally degraded person. In these skulls they had a means of investigating the species of criminal type because neither the last people whose families had for generations been devoted to crime and of such a thing as a criminal type prevailed they would expect to find it in them. Exhibiting a photograph of one of the Thug skulls Sir William said it was exceedingly well

formed. There was a well-arched forehead, and no want of symmetry. He did not consider that in these skulls of the Thugs there was any evidence whatever to support the view that there was a definite type of criminal skull. Sir William also described two skulls which had been sent him by a former pupil who was with the Thibet expedition. He pointed out that one, that of a Thibetan proper, was Mongolian in type; and the other, that of a Kham warrior, was of the long-headed type. The fighting of the Thibetans was very poor in the early stages of the expedition. They were so afflicted with monastic institutions that there was not much courage in them. The people of Kham, however, were different. They were warriors, and it was found that the fighting was more severe after the Kham warriors joined the Thibetan people. There seemed to be a physical correspondence between the people of the Kham country and the people of Upper Burma.—*British Medical Journal*.

Correspondence.

DIAGNOSIS OF SUBDELTOID BURSTITIS.

227 BEACON STREET, BOSTON, MASS.,
June 19, 1906.

Mr. Editor: Your issue of June 14 contains a letter from Dr. Dawbarn, of New York, concerning the diagnosis of subdeltoïd burstitis.

I feel very grateful to Dr. Dawbarn for his kind allusion to my paper published in your issue of May 31 and for his suggestion as to the diagnosis of subdeltoïd burstitis. Nevertheless, I am inclined to think that his communication gives a false impression and that the sign which he regards as "pathognomonic" is, perhaps, misnamed "pathognomonic," because it is only of value in a small proportion of the cases. The word "pathognomonic" implies that all cases of subdeltoïd burstitis have this sign. Dr. Dawbarn, I am sure, really means that cases which have this sign are cases of subdeltoïd burstitis. It is certainly very valuable in those cases in which muscular spasm or actual adhesions do not prevent the passage of the greater tuberosity under the acromion, but unfortunately those cases in which the tuberosity will not pass under the acromion form the majority of the cases one sees. For instance, in the cases which I have alluded to as type III it is of considerable service, for in these cases the arm can be abducted normally and the tender point will pass under the protection of the acromion process. This is not the case, however, in the types which I have described as I, II and IV. In type I (the acute cases) the sign is sometimes of use because the scapulo-humeral spasm does not entirely lock the motion in which the tuberosity passes under the acromion process; in other acute cases, however, the spasm is so great that the tender point is prevented from passing under the acromion and tenderness may still be elicited in abduction. In type II (the adherent cases), actual adhesions prevent the passage of the tuberosity under the acromion so that this sign cannot be used. In other cases the adhesions are entirely painless with no tenderness.

I want to thank Dr. Dawbarn, however, for alluding to this point because it is certainly of considerable value in mild acute cases and certain chronic cases in which motion is not greatly restricted. I must submit, however, that it is not "pathognomonic" and that a large majority of the cases do not exhibit this sign, because muscular spasm or actual adhesions prevent the passage of the tender point under the acromion.

Truly yours,

E. A. CODMAN, M.D.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JUNE 16, 1906.

| CITIES. | Reported deaths in each. | Deaths under five years. | CITIES. | Reported deaths in each. | Deaths under five years. |
|-----------------------|-----------------------------|-----------------------------|-----------------------|-----------------------------|-----------------------------|
| New York | 1,260 | 456 | Quincy | 2 | — |
| Chicago | 496 | 130 | Waltham | 1 | — |
| Philadelphia | — | — | Gloucester | 2 | 2 |
| St. Louis | — | — | Pittsfield | 1 | — |
| Baltimore | 166 | 43 | Brookline | 4 | 0 |
| Cleveland | — | — | North Adams | 3 | — |
| Buffalo | — | — | Chicopee | 6 | 4 |
| Pittsburg | — | — | Northampton | 9 | 2 |
| Cincinnati | — | — | Medford | 3 | 1 |
| Milwaukee | — | — | Beverly | 11 | 1 |
| Washington | — | — | Hyde Park | 2 | 2 |
| Providence | 78 | 30 | Newburyport | 1 | 1 |
| Boston | 130 | 36 | Leominster | 5 | 1 |
| Worcester | 30 | 8 | Melrose | 3 | 0 |
| Fall River | 41 | 21 | Woburn | 5 | 2 |
| Cambridge | 31 | 11 | Marlborough | 0 | 0 |
| Lowell | 38 | 9 | Westfield | 5 | 1 |
| Lynn | 22 | 4 | Peabody | 3 | — |
| New Bedford | 22 | 8 | Revere | 3 | 2 |
| Springfield | 16 | 3 | Clinton | 4 | 2 |
| Lawrence | 16 | 3 | Attleboro | 1 | 4 |
| Somerville | 22 | 6 | Adams | — | — |
| Holyoke | 9 | 5 | Gardner | 12 | — |
| Brockton | 8 | 1 | Milford | 1 | 1 |
| Malden | 10 | 2 | Weymouth | 5 | 1 |
| Salem | 9 | — | Framingham | 3 | — |
| Chelsea | 15 | 5 | Watertown | 2 | — |
| Haverhill | 7 | 1 | Plymouth | — | — |
| Newton | 10 | — | Southbridge | 4 | 2 |
| Fitchburg | 5 | — | Wakefield | 3 | — |
| Taunton | 17 | 1 | Webster | — | — |
| Everett | 4 | 2 | | | |

SOCIETY NOTICE.

OFFICERS OF THE LARYNGOLOGICAL, RHINOLOGICAL AND OTOLOGICAL SOCIETY.—Wendell C. Phillips, president, New York, N. Y.; Vice-presidents: C. G. Coadley, M.D., chairman Eastern Section, New York, N. Y.; John M. Ingersoll, M.D., chairman Middle Section, Cleveland, Ohio; W. C. Bane, M.D., chairman Western Section, Denver, Colo.; J. M. Ray, M.D., chairman Southern Section, Louisville, Ky. Secretary, Thomas J. Harris, M.D., 117 East 40th St., New York City. Treasurer, Edwin W. Day, M.D., 71 Westinghouse Building, Pittsburgh, Pa.

RECENT DEATHS.

JOHN ALEXANDER TANNER, M.D., M.M.S.S., died in Dorchester, June 21, 1906, aged fifty-three years.

DR. WILLIAM DUFF BULLARD, of New York, died on June 20. He was the son of Dr. William M. Bullard, and was born in New York City in 1872. He was graduated from Amherst College in 1892, and from the College of Physicians and Surgeons, New York, in 1895. He served as interne in the New York Post-Graduate Hospital, and later was made adjunct professor of surgery in the Post-Graduate Medical School. He resigned this position in 1900, and at the time of his death was an assistant surgeon at the Hospital for Ruptured and Crippled.

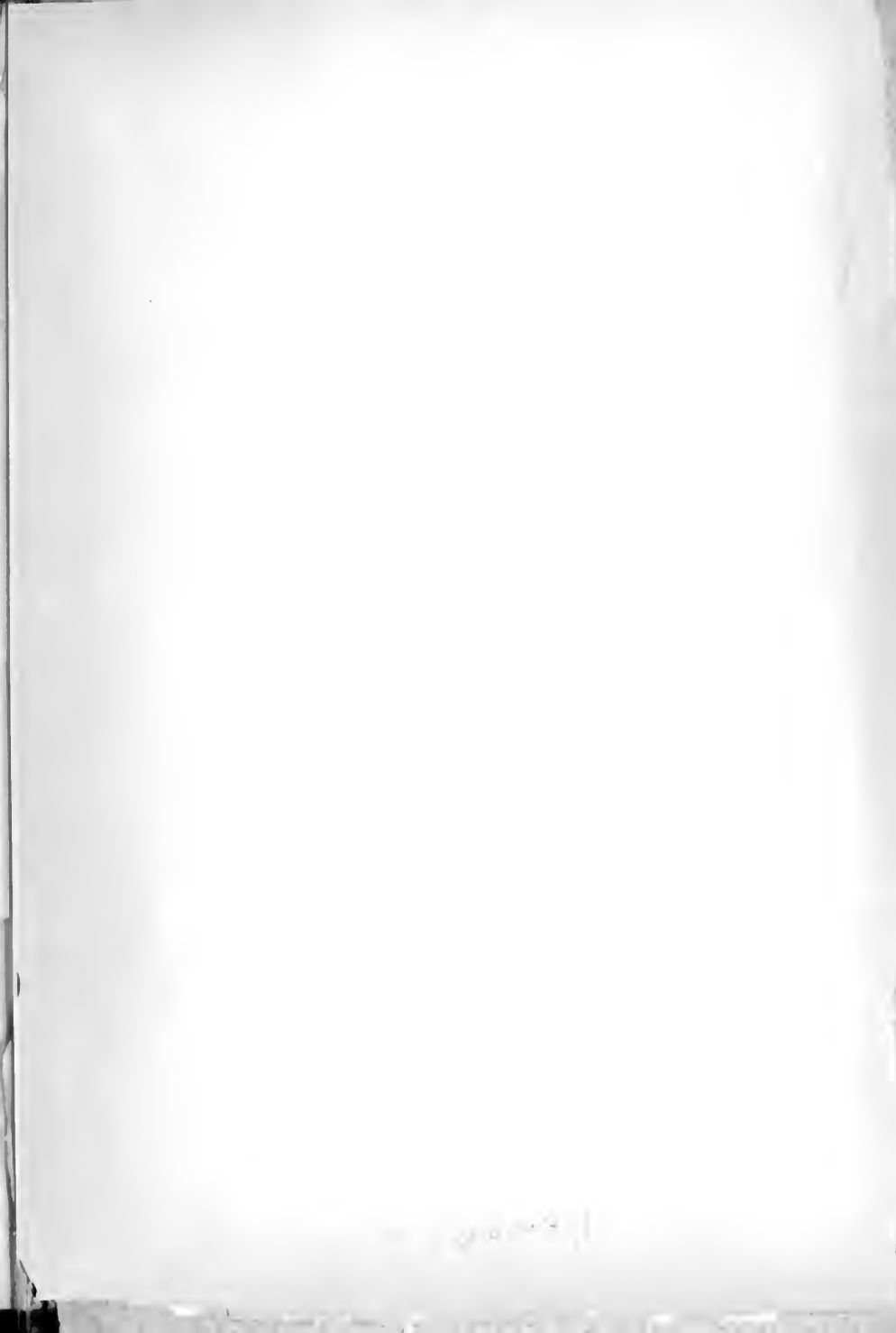
DR. THOMAS DE L. BURCKHALTER, of New York, died from cardiac disease at St. Vincent's Hospital in that city on June 20. He was thirty-two years old, and a native of Aiken, S. C., and was graduated from the Carolina Medical College in 1885. He removed to New York some time ago, and for three years was assistant resident physician at the Willard Parker Hospital for contagious diseases. A few months since he resigned that position to become an inspector in the Health Department.

DR. KARL EDWARD BEHN, surgeon of the Hamburg-American steamship "Graf Waldersee," died from cardiac disease on that vessel on June 16, and was buried at sea. He was forty-five years of age, and had been in the medical service of the Hamburg-American Line for ten years.

BOOKS AND PAMPHLETS RECEIVED.

Encyclopedia and Dictionary of Medicine and Surgery. Vol. I. Illustrated. Edinburgh and London: William Green & Sons, 1906.

Human Sexuality. A Medico-Literary Treatise on the Laws, Anomalies and Relations of Sex with Especial Reference to Contrary Sexual Desire. By J. Richardson Parke, Sc.B., Ph. G., M.D. Philadelphia: Professional Publishing Co. 1906.



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